# HP StorageWorks Command View XP

## Advanced Edition Device Manager CLI User Guide

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Legal notices



Command View XP Advanced Edition Device Manager CLI User Guide

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# About this guide

This document describes and provides instructions for using the Command Line Interface (CLI) software for HP StorageWorks Command View XP Advanced Edition Device Manager.

# Intended audience

This document assumes that the user:

- Has a background in data processing and understands peripheral storage device subsystems and their basic functions.
- Is familiar with the operating system which hosts the HP StorageWorks Command View XP Advanced Edition Device Manager Web Client software.

# Prerequisites

Prerequisites for installing this product include:

- Reading through the user's guide
- Meeting all the minimum installation requirements
- Reviewing the Release Notes on the CD for any last-minute announcements

# Document conventions and symbols

Table 1 Document conventions

| Convention Element | Convention Element |
|---|---|
| Medium blue text: Figure 1 | Cross-reference links and e-mail addresses |
| Medium blue, underlined text (http://www.hp.com) | Web site addresses |
| **Bold font** | • Key names<br>• Text typed into a GUI element, such as into a box<br>• GUI elements that are clicked or selected, such as menu and list |
| *italics font* | Text emphasis |
| `Monospace font` | • File and directory names<br>• System output<br>• Code<br>• Text typed at the command-line |
| *`Monospace, italic font`* | • Code variables<br>• Command-line variables |
| **`Monospace, bold font`** | Emphasis of file and directory names, system output, code, and text typed at the command-line |

CAUTION: Indicates that failure to follow directions could result in damage to equipment or data.

IMPORTANT: Provides clarifying information or specific instructions.

NOTE: Provides additional information.

# HP technical support

Telephone numbers for worldwide technical support are listed on the HP web site:

http://www.hp.com/support/

Collect the following information before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

For continuous quality improvement, calls may be recorded or monitored.

HP strongly recommends that customers sign up online using the Subscriber's choice web site at

http://www.hp.com/go/e-updates

- Subscribing to this service provides you with email updates on the latest product enhancements, newest versions of drivers, and firmware documentation updates as well as instant access to numerous other product resources.
- After signing-up, you can quickly locate your products by selecting **Business support** and then **Storage** under Product Category.

# HP-authorized reseller

For the name of your nearest HP-authorized reseller:

- In the United States, call 1-800-345-1518
- Elsewhere, visit http://www.hp.com and click **Contact HP** to find locations and telephone numbers

# Helpful web sites

For additional product information, see the following web sites:

- http://www.hp.com
- http://www.hp.com/go/storage
- http://www.hp.com/support/

# Revision history

## Revision tables

Table 2 Revisions

| Date | Edition | Revision |
|---|---|---|
| July 11, 2005 | First | Initial Release |
| October, 2005 | Second | • By the `AddHostStorageDomain` command and `ModifyPort` command, the following hostmode modes have been added:<br>  • Standard Extension2<br>  • Solaris Extension2<br>  • Windows Extension2<br>  • AIX Extension2 |

# 1 Command View XP Advanced Edition Device Manager Overview

This chapter provides an overview of Command View XP Advanced Edition Device Manager and describes its software components.

- Overview of Command View XP Advanced Edition Device Manager (section 1-1)
- Related software products (section 1-4)
- Command View XP Advanced Edition Device Manager Software Components (section 1-2)
- Downloading CLI from the Device Manager server (section 1-5)

## 1-1 Overview of Command View XP Advanced Edition Device Manager

Device Manager provides a consistent, easy to use, and easy to configure interface for managing storage products. Device Manager provides a web-based graphical client interface for real-time interaction with managed storage arrays as well as a command line interface (CLI) for scripting. Device Manager gives storage administrators easier access to the configuration, monitoring, and management features. Device Manager allows you to view the configuration of the storage arrays added to the Device Manager system, and perform configuration operations such as allocating storage or securing LUNs. Device Manager allows you to quickly discover storage subsystems based on key attributes, and efficiently manage complex and heterogeneous storage environments. Device Manager allows you to back up and restore your configuration database. In addition, Device Manager can securely manage storage management remotely, by means of SSL-based communications.

Device Manager provides:

- Storage subsystem discovery and configuration display
- Hierarchical group management for storage
- Alert presentation
- Volume (LUN) configuration
- Management of hosts and WWNs
- Several levels of access and functionality for end users, including access control, storage management and system support:
  - Access control handles support for the system administrator, storage administrator, maintenance user and guest user
  - Storage management functions include storage configuration and manipulation
  - System support functions include user administration, host agent activity and security

IMPORTANT: Device Manager does not support management of mainframe volumes. You may view those volumes only.

## 1-2 Command View XP Advanced Edition Device Manager Software Components

Command View XP Advanced Edition Device Manager consists of the following basic components:

- Command Line Interface (CLI). Device Manager CLI enables you to perform client operations by issuing commands from the system command-line prompt.
- Server. The Device Manager server communicates with StorageWorks XP Disk Array storage subsystems. In addition, the Device Manager server manages client connections with Device Manager Web Client and the Device Manager agent(s) using the http protocol. The Device Manager agent and the Device Manager server can be installed on the same host machine. For more information about the Device Manager server, please refer to the *HP StorageWorks XP Advanced Edition Device Manager Server Installation and Configuration Guide*.
- Web Client. Device Manager Web Client is a web-based user interface for monitoring and managing StorageWorks XP Disk Array storage subsystems. Web Client is a stand-alone Java™-based application that is deployed using the Java™ Web Start (JWS) software. It communicates with and runs as a client of

the Device Manager server. For further information on Device Manager Web Client, please refer to the *HP StorageWorks XP Advanced Edition Device Manager Web Client User Guide*.

- Agent. The Device Manager agents run on host computers attached to StorageWorks XP Disk Array storage subsystems under management by Device Manager. The Agent on a host collects data on the configuration and utilization of the attached storage and sends this information to the Device Manager server. For further information on the Device Manager agent, please refer to the *HP StorageWorks XP Advanced Edition Device Manager Agent Installation Guide*. The Device Manager agent and the Device Manager server can be installed on the same host machine.

# 1-3 Command View XP AE Suite Common Component

Command View XP AE Suite Common Component is a package of features that are used by all Command View XP AE Suite software. It is installed as part of the Device Manager installation. Each Command View XP AE Suite software bundles Command View XP AE Suite Common Component to use the following functions:

- Single Sign-On
- Integrated logging and repository
- Common Web Service

# 1-4 Related Software Products

- Hitachi Dynamic Link Manager (HDLM) for Sun™ Solaris™ and Hitachi Dynamic Link Manager for IBM® AIX® (from 3.0 to 5.6) manage the storage access paths to and from the host on which it is installed. The HDLM GUI for Sun™ Solaris™ and HDLM GUI for IBM® AIX® can be displayed from Device Manager Web Client.
- RAID Manager XP is installed on a host, and manages StorageWorks XP Disk Array subsystems from a command line. RAID Manager XP tasks include collecting information about storage pair configurations and reporting the information to the Device Manager server.
- Continuous Access XP can create a replica of one or more volumes in a remote subsystem.
- Business Copy XP can create a replica of one or more volumes in the same subsystem.

# 1-5 Downloading CLI from the Device Manager Server

By using Web Client, you must download Device Manager CLI from the Device Manager server.

To download Device Manager CLI from the Device Manager server:

1. In the navigation frame of Web Client, select the Device Manager object.
2. Select the Download method in the method frame.
3. Click the Download link that corresponds to the OS running on the machine on which Device Manager CLI is to be installed.
4. Copy the downloaded file to the machine on which Device Manager CLI is to be installed.
5. Decompress the downloaded file. After modifying the `hdvmcli.properties` file as needed, you can run Device Manager CLI.

For details on how to download Device Manager CLI, see the manual *HP StorageWorks Command View XP Advanced Edition Device Manager Web Client User Guide*.

# 2 Setting Up Command Line Interface

This chapter describes the system requirements and launching instructions for Device Manager CLI.

- CLI Requirements (section 2-1)
- Launching CLI (section 2-2)
- Using CLI with a secured server (section 2-3)

## 2-1 Requirements for CLI Operations

- Storage Subsystems.

  All storage subsystems must be configured for Device Manager operations. Please refer to *HP StorageWorks Command View XP Advanced Edition Device Manager Web Client User Guide* for detailed information on storage subsystem requirements.

- Device Manager Server.

  Please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Server Installation and Configuration Guide* for more information on installing and configuring the Device Manager server.

- Device Manager Agent

  Installation of the Device Manager agent is recommended; however, it is not required for Device Manager operations. If installed, the agent will display storage usage and file system statistics. Please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Agent Installation Guide* for more information.

- Java™ execution environment
  - JRE (Java™ Runtime Environment) version 1.4.2_XX (XX: 06 or later).
  - JWS (Java™ Web Start) version 1.4.2_XX (XX: 06 or later).

NOTE: Make sure that you use the latest version of the above products.

NOTE: JWS is automatically installed during installation of JRE.

- Memory Requirements
  - `HDVM_CLI_MEM_SIZE` default value is `256`MB. This value is specified in bytes and must be a multiple of `1024` that is greater than `2`MB. Be sure to specify K for kilobytes and M for megabytes.
  - `Get` commands such as `GetStorageArray`, `GetLogicalGroup`, and `GetHostInfo` may require more memory due to command parameters assigned.
  - If the Device Manager server is managing multiple subsystems, you will need more Device Manager CLI memory.

  NOTE: If the value of `HDVM_CLI_MEM_SIZE` is less than what is required by a CLI command, Device Manager CLI terminates and the following error message is displayed:

  ```
  Exception in thread "main" java.lang.OutOfMemoryError
       <<no stack trace available>>
  ```

- Supported Platforms
  - Microsoft® Windows® XP (Service Pack 1 and 2)
  - Microsoft® Windows® 2000 (Service Pack 3 or later)
  - Microsoft® Windows® Server™ 2003 (no Service Pack or Service Pack 1) (32-bit version only)
  - Sun™ Solaris™ 8 or 9, (SPARC® platform only)
  - HP UX 11i (v1 and v2)

## 2-2 Launching CLI

The URL of the Device Manager server must be specified, either on the command line or in the properties files (described below). The URL must include the following items:

- Http protocol: `http://` or `https://` (see section 2-3 for https requirements)
- Host name or IP address of the Device Manager server

- Port number of the Device Manager server (default is 2001)
- Base address of the Device Manager server (default is service, unless the server has been configured with a non-standard servlet alias)

NOTE: When the CLI properties file has an option with no arguments, you cannot cancel the option from the command line.

To launch Device Manager CLI, execute the following command from Device Manager CLI installation directory:

- In Windows®:

  ```
  C:\hdvm> hdvmcli.bat
  ```

- In Solaris™ or HP-UX:

  ```
  # ./hdvmcli.sh
  ```

NOTE: This assumes that Device Manager CLI was installed in the c:\hdvm folder.

NOTE: If you launch Device Manager CLI without specifying any command line options, command arguments are displayed.

# 2-3 Using CLI with HTTPS

To implement Device Manager CLI while running HTTPS on the Device Manager server:

1. Download the `HiCommandCerts` file from the Device Manager server from the following URL: http://<device-manager-server>:<port-id>/service/HiCommandCerts

   NOTE: <device-manager-server> indicates the server's IP address or host name.

2. Store the downloaded file in the Device Manager CLI installation directory. The installation directory contains the `hdvmcli.bat` file.

   NOTE: Use the filename `HiCommandCerts`.

3. Set the path name of the `HiCommandCerts` file in the `HDVM_CLI_CERTS_PATH` environment variable.
   - In Windows®: *<device-manager-cli-installation-folder>*`\HiCommandCerts`
4. Execute the desired command. For example, type as shown below to execute the `GetServerInfo` command:
   - In Windows®: `hdvmcli -s https:// `*<device-manager-server>*`:2443/service GetServerInfo`

   NOTE: Observe the following guidelines:
   - Use the https protocol for the Device Manager server URL.
   - Use the https port for the Device Manager server URL (`2443`, unless configured differently in the server's configuration file).
   - Use the `-s` (or `--secure`) switch.

# 3 Command Line Interface Syntax and Parameters

This chapter describes the command syntax and command parameters.

- Command Line Values Syntax (section 3-1)
- CLI Return Responses (section 3-2)
- Displaying CLI Help (section 3-3)
- Guidelines for Executing CLI Commands (section 3-4)

## 3-1 Command Line Syntax

Device Manager CLI only supports ASCII characters. The general format for the command line values is:

`C:\hdvmcli [server-location] [command] [options] [parameters]`

- Server-location indicates the complete URL of the Device Manager server, e.g., http://localhost:2001/service. This includes the service address, unless the server has been configured with a non-standard servlet alias. If you use a property file, you can omit the URL. For details about how to specify the URL, see section 5-3-3.
- Commands make processing requests to the server, e.g., `GetStorageArray` or `AddLogicalGroup`. These are not required when reading the request from an XML file.
- Options control the behavior of Device Manager CLI application. Each option has a single character and an alternate word representation. A single character will have a single dash as a prefix. A word will have two dashes as a prefix. Most options require a following argument. See Table 3-1 for a list and description of Device Manager CLI options. Specifying an option in the properties file enables you to omit the option when you execute the command. For details about how to specify options, see section 5-1.
- Parameters are passed to the server as part of a request. Depending on the command, some are required and some are optional. Each parameter is represented as a name/value pair, e.g., name=value.

Table 3-1 hdvmcli Options

| Option | Argument | Description |
|---|---|---|
| `-i` or `--input` | *`filename`* | Takes input from the specified file, which must contain the server request as a complete XML document, and outputs it as an XML-formatted document. |
| `-o` or `--output` | *`filename`* | Send output to the specified file, instead of the console. |
| `-p` or `-password` (see Note) | *`password`* or *`@password`* | Either a valid password for the server or a file containing the login password (when preceded by a '@'). See Note. This option is essential if you do not specify it in the properties file. |
| `-s` or `--secure` | no argument | Uses a secure connection (`https`) to communicate with the server. |
| `-u` or `--user` | *`userid`* | A valid user ID for the server. This option is essential if you do not specify it in the properties file. |
| `-t` or `--messagetrace` | no argument | Outputs the request and the response in the `MessageTrace.log` file. |

NOTE: A password can be contained in a text file. This file generally has restricted access, but that must include the user. The file path is specified either relative to the location where the application is run or as an absolute path, and is preceded by an "@" character. The text of the first line is the password.

The parameters that form the input to a command are specified on the command line as name/value pairs. The parameter name is specified first, then the equal sign and the parameter value, as follows:

```
ipaddress=192.168.2.2
```

Whenever a parameter value requires one or more space characters, double quotes can be used to enclose the parameter value, as follows:

NOTE: When you are performing this command, do not shut down the hosts that are using storage subsystem volumes, or the host for the Device Manager agent, or execution might take longer.

```
description="Our Newest Array"
```

Each command may have required parameters, optional parameters, or both, and you can specify any parameter in the application's properties file. If a parameter is specified both on the command line and in the properties file, the value from the command line is used.

For more information on Device Manager properties, please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Server Installation and Configuration Guide*. For more information on Device Manager client operations (for example, Web Client, CLI, third-party applications), please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Web Client User Guide*.

Device Manager CLI includes a help file. To see the parameters associated with a particular command, enter:

```
C:\hdvm> hdvmcli help command-name
```

For example, to display the output shown in Figure 3-1, enter:

```
C:\hdvm> hdvmcli help AddLun
```

```
COMMAND: AddLun
DESCRIPTION: Defines a path from a host to a volume.
PARAMETERS:
    serialnum    (required) Serial Number of the Storage Array of the new Path
    model        (required) Model of the Storage Array of the new Path
    name         (optional) Name of the new Path
    port         (required) Port Number of the new Path
    domain       (required) For USP, 9900V, XP12K/10K, XP1024/128,
                            9500V (with LUNManagement), AMS and WMS required;
                            others, optional.
                            Domain Number of the new Path, can not be
                            set with parameter wwn together.
    scsi         (optional) SCSI ID of the new Path
    lun          (required) Number of the actual LUN used for path
    devnum       (optional) Device number used to identify this logical unit
    lusedevnums  (optional) "Comma-separated list of LDEV devnums required for
                            LUSE LUN definition
    wwn          (optional) Except USP, 9900V, XP12K/10K, XP1024/128,
                            9500V (with LUNManagement), AMS and WMS.
                            Comma-separated list of WWN to secure the path, can
                            not be set with parameter domain together.
```

Figure 3-1 Example of CLI Help for the AddLun Command

# 3-2 CLI Return Responses

Device Manager CLI returns the execution result value at the end of its process. Table 3-2 lists and describes the CLI return values.

Table 3-2 Return Values

| Return Values | Description |
|---|---|
| -1 | Specified parameter not defined |
| 0 | CLI ends normally. |
| 1 | CLI found errors within its process (for example, parameter error). |
| 2 | CLI found errors in the Device Manager server. |

# 3-3 Displaying CLI Help

If you want to display basic help information, launch Device Manager CLI with no associated parameters. This basic information will include the current CLI version.

- In Windows®: `c:\hdvm> hdvmcli`
- In Solaris™ or HP-UX: `# ./hdvmcli`

Figure 3-2 displays sample help information, including the CLI version.

```
Device Manager CLI version "1.1.0-00"
USAGE: hdvmcli {server-url} {server-command} [options] [parameters]
AVAILABLE COMMANDS:
        AddStorageArray
        GetStorageArray
        DeleteStorageArray
        AddLunScan
        AddLogicalGroup
        DeleteLogicalGroup
        ModifyLogicalGroup
        GetLogicalGroup
        AddObjectForLogicalGroup
        DeleteObjectForLogicalGroup
        AddLunGroup
        ModifyLunGroup
        AddWWNForLUNGroup
        DeleteWWNForLUNGroup
        AddWWNGroup
        ModifyWWNGroup
        DeleteLunGroup
        AddLun
        DeleteLun
        AddHostStorageDomain
        DeleteHostStorageDomain
        AddWWNForLun
        DeleteWWNForLun
        AddWWNForHostStorageDomain
        DeleteWWNForHostStorageDomain
        DeleteWwn
        DeleteWwnGroup
        AddHost
        DeleteHost
        ModifyHost
        GetHost
        AddHostRefresh
        AddHostInfo
        DeleteHostInfo
        ModifyHostInfo
        GetHostInfo
        GetServerInfo
        GetLogFile
        ModifyDebugLevel
        GetDebugLevel
        GetAlerts
        DeleteAlerts
        AddArrayGroup
        DeleteArrayGroup
        AddLogicalUnit
        DeleteLogicalUnit
        ModifyLogicalUnit
        AddSpareDrive
        DeleteSpareDrive
        ModifyPort
        ModifyPortController
        AddURLLink
        DeleteURLLink
        GetURLLink
        RefreshStorageArrays
        AddLUSE
```

Figure 3-2 CLI Help (continues on next page)

```
        DeleteLUSE
        AddReplication
        DeleteReplication
        ModifyReplication
        AddConfigFileForReplication
        GetReplicationControllerPair
        AddArrayReservation
        ModifyArrayReservation
        DeleteArrayReservation
        GetArrayReservation

FOR COMMAND-SPECIFIC HELP, TYPE: "hdvmcli help {server-command}"

AVAILABLE OPTIONS:
    -u {userid} or --user {userid}         login user ID for
                                           Device Manager Server

    -p {password} or --password {password} login password for
                                           Device Manager Server

    -s or --secure                         presence indicates
                                           secure connection
                                           (https)

    -i {filename} or --input {filename}    take input from the
                                           specified file,
                                           which must contain
                                           the complete xml
                                           request
    -o {filename} or --output {filename}   send output to the
                                           specified file,
                                           instead of the
                                           console
    -t or --messagetrace                   record raw XML
                                           request and
                                           response in
                                           MessageTrace.log file

SPECIFYING PARAMETERS:
    Specify parameters for a command using name/value pairs,
    like: serialnum=30051.  Use the command-specific help to see
    the parameters for a given command.
```

Figure 3-2 CLI Help (continued)

# 3-4 Guidelines for Executing CLI commands

Table 3-3 lists some procedures to use when you execute Device Manager CLI command.

Table 3-3 Notes on Executing CLI Commands

| Item | Description | Related Commands |
|---|---|---|
| Adding a LUN or host storage domain (for StorageWorks XP12000/XP10000 and StorageWorks XP1024/XP128) | Be sure to stop host I/O to the corresponding port before setting up security for a LUN or host storage domain. Otherwise, I/O operations might terminate in an error. | `AddLun`<br>`AddHostStorageDomain` |
| Setting up security for a LUN or host storage domain | Be sure to stop host I/O to the corresponding port before setting up security for a LUN or host storage domain. Otherwise, I/O operations might terminate in an error. | `AddWWNForLun`<br>`AddWWNForHostStorageDomain` |

Table 3-3 Notes on Executing CLI Commands

| Item | Description | Related Commands |
|---|---|---|
| Changing the security or deleting storage that belongs to a LUN group. | When changing the security or deleting LUNs that belong to LUN groups, perform operations on each LUN group.If you want to delete or change security for only some of the LUNs that belong to a LUN group, use the `ModifyLunGroup` command to release the target LUNs from the LUN group, and then perform the operation for each LUN. | `ModifyLunGroup`<br>`DeleteLun`<br>`AddWWNForLun`<br>`DeleteWWNForLun` |
| Usable characters for logical group, host, and storage subsystem names. | When the CLI command and Web Client are used at the same time, usable characters for logical group, host, and storage subsystem names are the following:<br>`A-Z a-z 0-9 - _ . @`<br>Spaces can also be used, but you cannot use a name that consists of spaces only.<br>If characters other than those shown above are used, operation from Web Client might not be possible. | `AddLogicalGroup`<br>`ModifyLogicalGroup`<br>`AddHost`<br>`ModifyHost`<br>`AddStorageArray` |
| Using URLLink | When the CLI command and Web Client are used at the same time, other Web programs provided by Web Client might not be able to start. Only a system administrator who has expert knowledge can use this combination. | `AddURLLink`<br>`DeleteURLLink` |
| Using Disk/Cache Partition (when using StorageWorks XP12000/XP10000) | When you use Disk/Cache Partition to create a LUSE volume, path, or copy pair (Business Copy XP), specify the same storage logical partition. If you specify a different storage logical partition, the storage partition administrator will not be able to manage the created resource. | `AddLUSE`<br>`AddLun`<br>`AddReplication` |

# 4 Command Line Interface Commands

This chapter discusses the following topics:

- Extracting parameter values (section 4-1)
- CLI commands and subsystem applicability (section 4-2)
- Storage Array Commands (section 4-3)
- Logical Command Groups (section 4-4)
- LUN Commands (section 4-5)
- Host Management Commands (section 4-6)
- Server Management Commands (section 4-7)
- Replication Commands (section 4-8)

## 4-1 Extracting Parameter Values

Some of the parameter values for CLI commands can be found by executing other CLI commands and extracting the parameter values from the resulting output. For example, in some CLI commands the `devnum` is a required parameter. To find a particular `devnum` parameter you can execute the `GetStorageArray (subtarget=LDEV)` command, specifying only the `model` and `serialnum` parameters, and specifying `LDEV` for the `subtarget` parameter. In the resulting output, the `devnum` value appears under `An instance of LogicalUnit`.

Table 4-1 describes which CLI commands can be used to find which parameter values.

Table 4-1 Extracting Parameter Values

| To Find This Parameter Value: | Do This: |
|---|---|
| `alertnum` | Execute the `GetAlerts` command. Use the value displayed as alert `number` under `An instance of Alerts`. |
| `arraygroupobjid` | Execute the `GetStorageArray (subtarget=ArrayGroup)` command, specifying only the `model` and `serialnum` parameters, and `ArrayGroup` for the `subtarget` parameter. Use the array group displayed as `objectID`. |
| `chassis` | Execute the `GetStorageArray (subtarget=ArrayGroup)` command, specifying only the `model` and `serialnum` parameters, and `ArrayGroup` for the `subtarget` parameter. The `chassis` value appears in a `StorageArray`. |
| `ctrlid` | Execute the `GetStorageArray (subtarget=PortController)` command, specifying only the `model` and `serialnum` parameters, and `PortController` for the `subtarget` parameter. Use the value displayed as `controllerID`. |
| `configfileid` | Execute the `GetHost` command without specifying any parameters. Use the value displayed as `ConfigFile`. |
| `controllernum` | Execute the `GetStorageArray (subtarget=PortController)` command, specifying only the `model` and `serialnum` parameters, and the value for `subtarget=PortController`. Use the value specified as `controllerID`. |
| `devnum` | Execute the `GetStorageArray (subtarget=LDEV)` command, specifying only the `model` and `serialnum` parameters, and `LDEV` for the `subtarget` parameter, and then obtain the value from the execution result. In the execution result of this command, the `devNum` value appears in `An instance of LogicalUnit`. |
| `domain` | Execute the `GetStorageArray (subtarget=HostStorageDomain)` command, specifying only the `model` and `serialnum` parameters, and `HostStorageDomain` for the `subtarget` parameter. Use the `domainID` value. |
| `groupelements` | Execute the `GetStorageArray (subtarget=Port, portsubinfo=Path)` command, specifying only the `model` and `serialnum` parameters, `Port` for the `subtarget` parameter, and `Path` for the `portsubinfo` parameter. Use the `objectID` value. |
| `groupnum` | Execute the `GetStorageArray (subtarget=ArrayGroup)` command, specifying only the `model` and `serialnum` parameters, and `ArrayGroup` for the `subtarget` parameter. Use the `number` value. |

Table 4-1 Extracting Parameter Values

| To Find This Parameter Value: | Do This: |
|---|---|
| lun | Execute the GetStorageArray (subtarget=HostStorageDomain, hsdsubinfo=freelun) command, specifying only the model and serialnum parameters, HostStorageDomain for the subtarget parameter, and freelun for the hsdsubinfo parameter. Use one of the lun values. |
| lungroupid | Execute the GetStorageArray (subtarget=Port, portsubinfo=LUNGroup) command, specifying only the model and serialnum parameters, and LUNGroup for the portsubinfo parameter. Use the objectID value that appears under An instance of LUNGroup. |
| lusedevnums | Execute the GetStorageArray (subtarget=LDEV) command. Use the devNum value of the LDEV for which path=false and onDemandDevice=false. Be sure that the LDEVs have the same emulation, sizeInKB, and raidType attributes, specifying them in the form of a comma-delimited list. |
| mastercontrollerid | Execute the GetReplicationControllerPair command without specifying any parameters, and then obtain the value from the execution result. |
| masterserialnum | Execute the GetReplicationControllerPair command without specifying any parameters, and then obtain the value from the execution result. |
| model | Execute the GetStorageArray command. Use the displayArrayType value that appears under An instance of StorageArray. |
| nickname | Execute the GetStorageArray (subtarget=Port) command, specifying only the model and serialnum parameters, Port for the subtarget parameter, and HostStorageDomain for the portsubinfo parameter. The nickname value is displayed under An instance of HostStorageDomain. |
| objectid | Execute the GetStorageArray command, setting the subtarget corresponding to the desired component, and then obtain the value from the execution result. |
| pdevid | Execute the GetStorageArray (subtarget=PDEV) command, specifying only the model and serialnum parameters, and PDEV for the subtarget parameter. The objectID value that appears under An instance of PDEV consists of four parts, with adjoining parts separated by a dot. Use the right-most value of objectID to specify the pdevid parameter. |
| pdevnums | Execute the GetStorageArray (subtarget=PDEV) command, specifying only the model and serialnum parameters, and PDEV for the subtarget parameter. In the execution result of this command, the objectID value that appears in a PDEV consists of four parts, with adjoining parts separated by a dot. Enter the right-most value for the pdevnums parameter. If there is more than one such value specified, separate them with a comma. |
| port | Execute the GetStorageArray (subtarget=Port) command, specifying only the model and serialnum parameters, and the value for subtarget=Port. The portID value appears under An instance of Port. |
| pvoldevnum | Execute the GetHost command, and then obtain the value from the execution result. |
| pvolserialnum | Execute the GetHost command. The pvolSerialNum is displayed as An instance of ReplicationInfo. |
| remoteserialnum | Execute the GetReplicationControllerPair command without specifying any parameters, and then obtain the value from the execution result. |
| remoteSSID | Execute the GetReplicationControllerPair command without specifying any parameters, and then obtain the value from the execution result. |
| replicationgroupid | Execute the GetHost command, and then obtain the value from the execution result. |
| serialnum | Execute the GetStorageArray command, and then use the serialNumber value. |
| source | Execute the GetAlerts command, and then obtain the value from the execution result. |
| svoldevnum | Execute the GetHost command, and then obtain the value from the execution result. |
| svolsequencenum | Execute the GetStorageArray command for the storage subsystem that contains the S-VOL. Use the value of the sequenceNumber. |

Table 4-1 Extracting Parameter Values

| To Find This Parameter Value: | Do This: |
|---|---|
| svolserialnum | Execute the GetHost command, and then obtain the value from the execution result. |
| wwn | Execute the GetStorageArray (subtarget=Port, portsubinfo=WWN, WWNGroup, wwngroupsubinfo=WWN) command, specifying WWN for the portsubinfo parameter, and then obtain the value from the execution result.<br>NOTE: As an alternative method, you can specify the wwn parameter by creating a new WWN. You can use a WWN group to set the security if you specify all the WWNs existing in the WWN group. |
| wwngroup | Execute the GetStorageArray (subtarget=Port, portsubinfo=WWNGroup) command, specifying WWNGroup for the portsubinfo parameter. Use the nickname value that appears in WWNGroup. |

# 4-2 Supported CLI Commands

Table 4-2 through Table 4-7 give details about Device Manager CLI commands.

- Y indicates that the particular storage subsystem can be used to execute the command.
- -- indicates that it cannot be used to execute the command.

Table 4-2 Storage Array Commands

| Command Name | Description | Storage Subsystems | | Section |
|---|---|---|---|---|
| | | XP12000/XP10000 and XP1024/XP128 | XP512/XP48 | |
| AddArrayReservation | Locks a specified storage subsystem. | Y | Y | 4-3-1 |
| AddHostStorageDomain | Creates a host storage domain or host group. | Y | Y | 4-3-2 |
| AddLogicalUnit | Creates an LDEV and a logical unit in the storage subsystem. | Y | Y | 4-3-3 |
| AddLUSE | Creates a LUSE that does not have a path. | Y | -- | 4-3-4 |
| AddStorageArray | Detects a specified storage subsystem and sets it as the device to be managed by the Device Manager server. Information about the devices of the detected storage subsystem is registered in the Device Manager server database. | Y | Y | 4-3-5 |
| DeleteArrayReservation | Unlocks a specified storage subsystem. | Y | Y | 4-3-6 |
| DeleteHostStorageDomain | Deletes a host storage domain or host group. | Y | Y | 4-3-7 |
| DeleteLogicalUnit | Deletes one or more LUs and the corresponding LDEVs. | Y | Y | 4-3-8 |
| DeleteLUSE | Deletes a LUSE that does not have a path. | Y | -- | 4-3-9 |
| DeleteStorageArray | Excludes a storage subsystem from the group of storage subsystems managed by the Device Manager server. | Y | Y | 4-3-10 |
| GetArrayReservation | Obtains information about the locked storage subsystem. | Y | Y | 4-3-11 |
| GetStorageArray (see Note) | Obtains information about the storage subsystems. | Y | Y | 4-3-12 |

Table 4-2 Storage Array Commands

| Command Name | Description | Storage Subsystems | | Section |
|---|---|---|---|---|
| | | XP12000/XP10000 and XP1024/XP128 | XP512/XP48 | |
| ModifyArrayReservation | Extends the maximum period for which a specified storage subsystem is locked. | Y | Y | 4-3-13 |
| ModifyLogicalUnit | Modifies the settings of the logical units and the corresponding LDEVs. | Y | Y | 4-3-14 |
| ModifyPort | Modifies port attributes. | Y | Y | 4-3-15 |
| ModifyPortController | Modifies port controller attributes. | Y | Y | 4-3-16 |
| RefreshStorageArrays | Obtains the most recent status of all storage subsystems managed by the Device Manager server. | Y | Y | 4-3-17 |

NOTE: You can use the subtarget parameter to specify the device information. Available values are:

- subtarget=ArrayGroup (see section 4-3-12-1)
- subtarget=Commparameters (see section 4-3-12-2)
- subtarget=Component (see section 4-3-12-3)
- subtarget=Filter (see section 4-3-12-4)
- subtarget=FreeSpace (see section 4-3-12-5)
- subtarget=HostStorageDomain (see section 4-3-12-6)
- subtarget=LDEV (see section 4-3-12-7)
- subtarget=LogicalUnit (see section 4-3-12-8)
- subtarget=Path (see section 4-3-12-9)
- subtarget=PDEV (see section 4-3-12-10)
- subtarget=Port (see section 4-3-12-11)
- subtarget=PortController (see section 4-3-12-12)
- subtarget=ReplicationInfo (see section 4-3-12-13)

Table 4-3 Logical Group Commands

| Command Name | Description | Section |
|---|---|---|
| AddLogicalGroup | Creates a logical group. | 4-4-1 |
| AddLunScan | Scans a storage subsystem in a LUN that is not allocated to a logical group. | 4-4-2 |
| AddObjectForLogicalGroup | Adds one or more existing objects (host storage domain or host) to a specified logical group in the Device Manager server. | 4-4-3 |
| DeleteLogicalGroup | Deletes an existing logical group from the Device Manager server. | 4-4-4 |
| DeleteObjectForLogicalGroup | Deletes a specified object from the logical group. | 4-4-5 |
| GetLogicalGroup | Obtains information about a specified logical group or all logical groups. | 4-4-6 |
| ModifyLogicalGroup | Modifies one or more attributes of an existing logical group. | 4-4-7 |

Table 4-4 LUN Commands

| Command Name | Description | Storage Subsystems | | Section |
|---|---|---|---|---|
| | | XP12000/XP10000 and XP1024/XP128 | XP512/XP48 | |
| AddLun | Defines a path to a volume from the host. | Y | Y | 4-5-1 |
| AddLunGroup | Creates a LUN group. | -- | Y | 4-5-2 |

Table 4-4 LUN Commands

| Command Name | Description | Storage Subsystems | | Section |
|---|---|---|---|---|
| | | XP12000/XP10000 and XP1024/XP128 | XP512/XP48 | |
| AddWWNForHostStorageDomain | Sets the security of a LUN in the host storage domain by assigning its WWN in the host storage domain. | Y | Y | 4-5-3 |
| AddWWNForLun | Sets the security of a path by assigning its WWN. | -- | Y | 4-5-4 |
| AddWWNForLunGroup | Sets the security of a LUN in a LUN group by assigning a WWN in the LUN group. | -- | Y | 4-5-5 |
| AddWWNGroup | Creates a WWN group. | -- | Y | 4-5-6 |
| DeleteLun | Deletes the path to a volume from the host. | Y | Y | 4-5-7 |
| DeleteLunGroup | Deletes a LUN group to which a port is assigned. | -- | Y | 4-5-8 |
| DeleteWWN | Deletes a WWN from a port. | Y | Y | 4-5-9 |
| DeleteWWNForHostStorageDomain | Releases the security set to a LUN in the specified host storage domain. | Y | Y | 4-5-10 |
| DeleteWWNForLun | Deletes a path from the host to a volume. | -- | Y | 4-5-11 |
| DeleteWWNForLunGroup | Deletes a WWN assigned to a LUN group. | -- | Y | 4-5-12 |
| DeleteWWNGroup | Deletes a WWN group. | -- | Y | 4-5-13 |
| ModifyLUNGroup | Modifies information about a specified LUN group. | -- | Y | 4-5-14 |
| ModifyWWNGroup | Modifies the information about a WWN group. | -- | Y | 4-5-15 |

Table 4-5 Host Management Commands

| Command Name | Description | Section |
|---|---|---|
| AddHost | Registers information about a host into the Device Manager server database. | 4-6-1 |
| AddHostInfo | Registers host-based information about a LUN into the Device Manager server database. | 4-6-2 |
| AddHostRefresh | Refreshes information about a host from the Device Manager server. | 4-6-3 |
| DeleteHost | Deletes information about a host from the Device Manager server database. | 4-6-4 |
| DeleteHostInfo | Deletes host-based information about a LUN from the Device Manager server database. | 4-6-5 |
| GetHost | Obtains information about a host. | 4-6-6 |
| GetHostInfo | Obtains host-based information about a LUN. | 4-6-7 |
| ModifyHost | Modifies information about a host. | 4-6-8 |
| ModifyHostInfo | Modifies host-based information about a LUN. | 4-6-9 |

Table 4-6 Server Management Commands

| Command Name | Description | Section |
|---|---|---|

Table 4-6 Server Management Commands

| Command Name | Description | Section |
|---|---|---|
| AddURLLink | Adds the URL associated with the application, and links it to the Command View XP AE object. | 4-7-1 |
| DeleteAlerts | Deletes information about one or more alerts that are managed by the Device Manager server. | 4-7-2 |
| DeleteURLLink | Deletes the relationship between the application or web page, and the Device Manager server object. | 4-7-3 |
| GetAlerts | Obtains information about one or more alerts that are managed by the Device Manager server. | 4-7-4 |
| GetDebugLevel | Obtains the current debug level of the Device Manager server. | 4-7-5 |
| GetLogFile | Obtains the requested Device Manager server log file. | 4-7-6 |
| GetServerInfo | Obtains the version, URL, and other information about the Device Manager server. | 4-7-7 |
| GetURLLink | Obtains any or all of the Device Manager server URLLink objects. | 4-7-8 |
| ModifyDebugLevel | Sets the amount of debugging information created by the Device Manager server. | 4-7-9 |

Table 4-7 Replication Commands

| Command Name | Description | Storage Subsystems | | Section |
|---|---|---|---|---|
| | | XP12000/XP10000 and XP1024/XP128 | XP512/XP48 | |
| AddConfigFileForReplication | Create the configuration definition file for copy pairs. | Y | Y | 4-8-1 |
| AddReplication | Creates copy pairs. | Y | Y | 4-8-2 |
| DeleteReplication | Deletes copy pairs. | Y | Y | 4-8-3 |
| GetReplicationControllerPair | Obtains RCU (remote path) information registered in the MCU (main control unit) in storage subsystems managed by the Device Manager server. | Y | Y | 4-8-4 |
| ModifyReplication | Changes copy pair status. | Y | Y | 4-8-5 |

# 4-3 Storage Array Commands

For information on storage array operations, please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Web Client User Guide*.

## 4-3-1 AddArrayReservation

`AddArrayReservation` locks the target storage subsystem (see Table 4-8).

When a storage subsystem is locked, you can execute storage array commands and LUN commands. You can execute the `GetStorageArray` command even if another user is locking the storage subsystem. If you do not change the configuration of the storage subsystem or execute the `ModifyArrayReservation` command within five minutes after locking the storage subsystem, the storage subsystem will be unlocked.

NOTE: You cannot use the GUI to operate a storage subsystem when it is locked. If you want to operate a locked storage subsystem, use the CLI commands.

You can execute the following commands:

- `AddStorageArray`
- `AddHostStorageDomain`
- `DeleteHostStorageDomain`
- `AddLun`
- `DeleteLun`

- AddLUSE
- DeleteLUSE
- AddWWNForHostStorageDomain
- DeleteWWNForHostStorageDomain
- AddWWNForLun
- DeleteWWNForLun
- DeleteWWN
- AddWWNGroup
- ModifyWWNGroup
- DeleteWWNGroup
- AddLunGroup
- ModifyLunGroup
- DeleteLunGroup
- AddWWNForLunGroup
- DeleteWWNForLunGroup
- AddLogicalUnit
- DeleteLogicalUnit
- ModifyLogicalUnit
- ModifyPort
- ModifyPortController

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

NOTE: A Local System Administrator or Local Storage Administrator can specify only storage subsystems that contain accessible LDEVs. If any other storage subsystems are specified, an error occurs.

Table 4-8 AddArrayReservation Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| model | Required | Model of the storage subsystem. |
| serialnum | Required | Serial number of the storage subsystem. |

Command execution example:

```
hdvmcli AddArrayReservation -o "D:\logs\AddArrayReservation.log" "model=XP12000"
"serialnum=14009"
```

Command execution result:

```
An instance of ArrayReservation
  objectID=ARRAYRESERVATION.USP.14009
  target=ARRAY.USP.14009
  loginID=dmuser
  beginTime=1,039,003,476
```

## 4-3-2 AddHostStorageDomain

AddHostStorageDomain adds a host storage domain (see Table 4-9). For the StorageWorks XP12000/XP10000 and XP1024/XP128, this command also creates a host group in the storage subsystem.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest

NOTE: For the StorageWorks XP12000/XP10000 and XP1024/XP128, when `AddHostStorageDomain` adds a host storage domain, the LUN security of the target port is automatically enabled.

Table 4-9 AddHostStorageDomain Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `domain` | Required | DomainID of the host storage domain.<br>NOTE: The specifiable values vary, depending on the storage subsystem.<br>For StorageWorks XP12000/XP10000: 1 to 254<br>For StorageWorks XP1024/XP128: 1 to 127<br>All Others: 1 to 511 |
| `hostmode` | Optional (StorageWorks XP12000/XP10000 and XP1024/XP128) | New host connect mode of the Host Storage Domain (normally, Standard).<br>For the StorageWorks XP12000/XP10000, you can specify the following values:<br>`Standard`<br>`Sequent`<br>`HP`<br>`Solaris`<br>`Netware`<br>`Windows`<br>`Windows Extension`<br>`Tru64`<br>`HI-UX`<br>`AIX`<br>`OPEN-VMS`<br>The following value relies on the DKC microcode version.<br>For 50-03-0X-XX/XX or later:<br>`UVM`<br><br>For the StorageWorks XP1024/XP128, you can specify the following values:<br>`Standard`<br>`Sequent`<br>`HP`<br>`Solaris`<br>`Netware`<br>`Windows`<br>`Windows Extension`<br>`Tru64`<br>`HI-UX`<br>`AIX`<br>`OPEN-VMS`<br>The following value relies on the DKC microcode version.<br>For 21-05-00-XX/XX or later:<br>`Windows Extension`<br>`Solaris Extension`<br>For 21-14-02-XX/XXor later:<br>`Standard Extension2`<br>`HP Extension2`<br>`Solaris Extension2`<br>`Windows Extension2` |
| `hostModeOption` | Optional (StorageWorks XP12000/XP10000 only) | An option of the host connection mode. To specify two or more options, separate them with semicolons (;).<br>For details about the values that you can specify, see Table 4-36. |
| `model` | Required | Model of the storage array for the Host Storage Domain. |
| `port` | Required | Port ID of the Host Storage Domain (a specific array must be specified by serial number and model). |
| `name` | Optional | Name of the Host Storage Domain. |

Table 4-9 AddHostStorageDomain Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| nickname | Optional (StorageWorks XP12000/XP10000 and XP1024/XP128) | Nickname of the Host Storage Domain.<br><br>The maximum number of characters that can be used for a nickname is as follows:<br>StorageWorks XP12000/XP10000: 16 bytes<br>DKC microcode version 50-04-01 or later: 32 bytes<br><br>StorageWorks XP1024/128: 8 bytes |
| serialnum | Required | Serial number of the storage array for the Host Storage Domain. |

Command execution example:

```
hdvmcli AddHostStorageDomain -o "D:\logs\XP12000 AddHostStorageDomain.log"
"serialnum=11111" "model=XP12000" "port=16" "domain=1" "hostmodeoption=2"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
      .
      . (Attributes of StorageArray are omitted here)
      .
  List of 1 HostStorageDomain elements:
    An instance of HostStorageDomain
      objectID=HSDOMAIN.USP.11111.16.1
      portID=16
      domainID=1
      hostMode=Standard
      hostModeOption=2
      displayName=CL1-E-1
      nickname=HCMD1001
```

## 4-3-3 AddLogicalUnit

`AddLogicalUnit` creates an LDEV and logical unit in Device Manager (see Table 4-10). When executed, this command also formats the logical devices that it creates.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

When executed, this command also formats the logical devices that it creates.

NOTE: You cannot create an LDEV that is the same size as the free space of the array group, because the control area is created on the storage subsystem side.

Table 4-10 AddLogicalUnit Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| serialnum | Required | Serial number of the storage array where LU is added. |
| model | Required | Model of the storage array where the LU is added. |
| chassis | Required | Number of chassis for the array group where LU is added. |
| groupnum | Required | Group number of the array group where LU is added. |
| capacity | Required | Desired capacity (in KB) for the new LU.<br>The specified value is adjusted, depending on the minimum unit that is set to the volume size of each storage subsystem. Therefore, the size of the logical unit that was actually created might exceed the specified value. |

Table 4-10 AddLogicalUnit Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| emulation | Optional | Emulation type of the logical unit in the StorageWorks XP Disk Array. Specify the same emulation type as the array group in which a logical unit is created. |
| devnum | Optional | LU device number. If omitted, the number is automatically generated. |
| lusubinfo | Optional | If set to LDEV, return the information on LDEV(s) related to the LU. Do not include any LU LDEVs. The only value possible is LDEV, which is not case-sensitive. |

Command execution example: In this example, the CLI command creates a logical unit (capacity: 1,000,080KB, emulation type: OPEN-3) for an array group (chassis number: 4, array group number: 32) in a storage subsystem (serial number: 10001, model: XP1024). The LDEVs used to create the logical unit are obtained from the execution result.

```
hdvmcli AddLogicalUnit -o "D:\logs\XP1024 AddLogicalUnit.log" serialnum=10001
model=XP1024 chassis=4 groupnum=32 capacity=1000080 emulation=OPEN-3 lusubinfo=LDEV
devnum=176
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 Lu elements:
    An instance of LogicalUnit
      objectID=LU.HDS9980V.10001.176
      devNum=176
      displayName=0:B0
      emulation=OPEN-3
      devCount=1
      devType=
      capacityInKB=1,000,080
      path=false
      commandDevice=false
      chassis=4
      arrayGroup=32
      raidType=RAID5(3D+1P)
      currentPortController=-1
      defaultPortController=-1
      isComposite=0
      continuousAccessVolumeType=Simplex
      businessCopyVolumeType=Simplex
      snapshotVolumeType=Simplex
      journalVolumeType=Simplex
      sysVolFlag=0
      externalVolume=0
      differentialManagement=0
      List of 1 Ldev elements:
        An instance of LDEV
          objectID=LDEV.HDS9980V.10001.176
          devNum=176
          displayName=0:B0
          emulation=OPEN-3
          cylinders=0
          isComposite=0
          sizeInKB=1,000,080
          lba=14,351,040
          raidType=RAID5(3D+1P)
          slotSizeInKB=48
          chassis=4
          arrayGroup=32
```

```
          path=false
          onDemandDevice=false
          devType=
          isStandardLDEV=false
          guardMode=
          substance=0
          volumeType=3
          diskType=-1
          cacheResidencyMode=-1
          stripeSizeInKB=-1
          slprNumber=-1
          clprNumber=-1
          volumeKind=3
```

## 4-3-4 AddLUSE

`AddLUSE` creates a LUSE without any path in the storage device (see Table 4-11).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator, Local Storage Administrator

NOTE: This function is not available for the StorageWorks XP512/XP48.

Table 4-11 AddLUSE Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array from which LUSE is added. |
| `model` | Required | Model of the storage array from which the LUSE is added. |
| `devnums` | Required | Comma-separated list of LDEV device numbers to create the LUSE. |

Command execution example:

```
hdvmcli AddLUSE -o "D:\logs\XP1024 AddLUSE.log" "serialnum=15001" "model=XP1024"
"devnums=1001,1002"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
          .
          . (Attributes of StorageArray are omitted here)
          .
  List of 1 Lu elements:
    An instance of LogicalUnit
      objectID=LU.HDS9980V.15001.1001
      devNum=1,001
      displayName=3:E9
      emulation=OPEN-3
      devCount=2
      devType=
      capacityInKB=4,806,720
      path=false
      commandDevice=false
      chassis=3
      arrayGroup=16
      raidType=RAID5(3D+1P)
      currentPortController=-1
      defaultPortController=-1
      isComposite=1
      continuousAccessVolumeType=Simplex
      businessCopyVolumeType=Simplex
      snapshotVolumeType=Simplex
```

```
journalVolumeType=Simplex
sysVolFlag=0
externalVolume=0
differentialManagement=0
List of 2 Ldev elements:
  An instance of LDEV
    objectID=LDEV.HDS9980V.15001.1001
    devNum=1,001
    displayName=3:E9
    emulation=OPEN-3
    cylinders=0
    isComposite=1
    sizeInKB=2,403,360
    lba=1,201,680
    raidType=RAID5(3D+1P)
    slotSizeInKB=48
    chassis=3
    arrayGroup=16
    path=false
    onDemandDevice=false
    devType=
    isStandardLDEV=true
    guardMode=
    substance=0
    volumeType=3
    diskType=-1
    cacheResidencyMode=-1
    stripeSizeInKB=-1
    slprNumber=-1
    clprNumber=-1
    volumeKind=3
  An instance of LDEV
    objectID=LDEV.HDS9980V.15001.1002
    devNum=1,002
    displayName=3:EA
    emulation=OPEN-3
    cylinders=0
    isComposite=1
    sizeInKB=2,403,360
    lba=1,201,680
    raidType=RAID5(3D+1P)
    slotSizeInKB=48
    chassis=3
    arrayGroup=16
    path=false
    onDemandDevice=false
    devType=
    isStandardLDEV=true
    guardMode=
    substance=0
    volumeType=3
    diskType=-1
    clprNumber=-1
    cacheResidencyMode=-1
    stripeSizeInKB=-1
    slprNumber=-1
    clprNumber=-1
    volumeKind=3
```

## 4-3-5 AddStorageArray

`AddStorageArray` performs a search for storage arrays, populating the Device Manager database with the identified device elements and refreshing information (see Table 4-12).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted: A Local System Administrator or Local Storage Administrator can use this command only when updating the registered information.

NOTE: When you are performing this command, do not shut down the hosts that are using storage subsystem volumes, or the host for the Device Manager agent, or execution might take longer.

Format for StorageWorks XP12000/XP10000 and StorageWorks XP1024/XP128:

```
hdvmcli [URL] AddStorageArray [options] ipaddress=IP address family=array-family
(displayfamily=array-family-to-be-displayed) [userid=user-name arraypasswd=user-password]
```

Format for StorageWorks XP512/XP48:

```
hdvmcli [URL] AddStorageArray [options] ipaddress=IP address family=array-family
(displayfamily=array-family-to-be-displayed) [searchcommunity=searchcommunity]
```

Table 4-12 AddStorageArray Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `arraypasswd` | Optional (XP12000/XP10000 and XP1024/XP128 only) | User password for array access.<br>For StorageWorks XP12000/XP10000 and XP1024/XP128, required only at the initial identification.<br>If you are refreshing information, you can omit this parameter if the user password was not changed. |
| `displayfamily` | Optional | Display array family of the target array.<br>This parameter is required at the initial identification. Obtain the values available for this parameter from the execution result of the `GetServerInfo` command. In the execution result of this command, a combination of the `arrayFamily` and `displayArrayFamily` values appears. For the StorageWorks XP Disk Array, use the `displayArrayFamily` value to specify the `family` and `displayfamily` parameters. |
| `family` | Required | Array family of the target array. |
| `ipaddress` | Required | Array IP address. |
| `searchcommunity` | Optional (XP512/XP48 only) | SNMP Community string, used for identifying device elements via SNMP (StorageWorks XP512/XP48 array). Default is public. |
| `userid` | Optional (XP12000/XP10000 and XP1024/XP128 only) | User ID for array access.<br>For StorageWorks XP12000/XP10000 and StorageWorks XP1024/XP128, required only at the initial identification.<br>When refreshing information, you can omit this parameter if the user ID was not changed. |

Command execution example: In this example, the CLI command accesses and detects the storage subsystems in an array family (family: `XP1024/128`, IP address: `172.16.45.1`). The command specifies the user ID (`root`) and the user password (`hdvm`). Information about the detected storage subsystems is registered in the Device Manager database.

```
hdvmcli AddStorageArray -o "D:\logs\XP1024 AddStorageArray.log" ipaddress=172.16.45.1
family=XP1024/128 userid=root arraypasswd=hdvm displayfamily=XP1024/128
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  objectID=ARRAY.HDS9980V.10001
  name=XP1024@172.16.45.1
  description=XP1024 (10001) at 172.16.45.1
  serialNumber=10001
  arrayFamily=HDS9900V
  arrayType=HDS9980V
  microcodeVersion=21-03-00/00
```

```
agentVersion=02-05-14
productName=XP1024
controllerVersion=21-04-00-00/00
numberOfControllers=4
capacityInGB=4,018
cacheInMB=-1
sharedMemoryInMB=-1
numberOfSpareDrives=-1
freeCapacityInGB=3,585
allocatedCapacityInGB=434
autoLunCapacityInGB=0
onDemandCapacityInGB=0
totalFreeSpaceInGB=45
largestFreeSpaceInGB=5
capacityInKB=4,213,640,160
freeCapacityInKB=3,759,001,920
allocatedCapacityInKB=454,638,240
autoLunCapacityInKB=0
onDemandCapacityInKB=0
totalFreeSpaceInKB=47,008,512
largestFreeSpaceInKB=5,753,088
multipathSupport=1
securityStatus=2
sequenceNumber=10001
displayArrayFamily=XP1024/128
displayArrayType=XP1024
numberOfLUs=1,744
numberOfAllocatedLUs=180
numberOfUnallocatedLUs=1,564
slprStatus=-1
openTotalCapacity=4,213,640,160
openAllocatedCapacity=454,638,240
openFreeCapacity=3,759,001,920
openAutoLunCapacity=0
openOnDemandCapacity=0
imTotalCapacity=0
imAllocatedCapacity=0
imFreeCapacity=0
imAutoLunCapacity=0
imOnDemandCapacity=0
mfTotalCapacity=0
mfAutoLunCapacity=0
mfOnDemandCapacity=0
mfAllocatedCapacity=0
mfUnallocatedCapacity=0
numberOfOpenAllocatedLUs=180
numberOfOpenUnallocatedLUs=1,564
numberOfImAllocatedLUs=0
numberOfImUnallocatedLUs=0
numberOfMfLDEVs=0
numberOfAllocatedMfLDEVs=0
numberOfUnallocatedMfLDEVs=0
productCode=1
List of 1 CommParameters elements:
    An instance of CommParameters
    userID=root
    userPassword=hdvm
    ipAddress=172.16.45.1
```

## 4-3-6 DeleteArrayReservation

`DeleteArrayReservation` unlocks the target storage subsystem (see Table 4-13).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest

Table 4-13 AddStorageArray Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Required | Model of the storage subsystem. |
| `serialnum` | Required | Serial number of the storage subsystem. |

Command execution example:

```
hdvmcli DeleteArrayReservation -o "D:\logs\DeleteArrayReservation.log" "model= XP12000"
"serialnum=14009"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-3-7 DeleteHostStorageDomain

`DeleteHostStorageDomain` deletes a host storage domain. For the StorageWorks XP12000/XP10000 and XP1024/XP128, this command deletes a host group from the storage subsystem (see Table 4-14).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest

NOTE: When a host group or host storage domain to which paths are assigned is specified, access permissions to all the LDEVs to which paths are assigned are required. If any inaccessible LDEVs are included, an error occurs.

Table 4-14 DeleteStorageHostDomain Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `deletionoption` | Optional | Only possible value is: `lusekeep`<br>Omit this parameter to delete a LUSE. |
| `domain` | Required | The domain ID of the Host Storage Domain to be deleted.<br>NOTE: Do not specify 0. You cannot delete host domain 0. |
| `model` | Required | Model of the storage array for the Host Storage Domain. |
| `port` | Required | The port ID of the Host Storage Domain to be deleted. |
| `serialnum` | Required | Serial number of the storage array for the Host Storage Domain. |

Command execution example:

```
hdvmcli DeleteHostStorageDomain -o "D:\logs\XP1024 DeleteHostStorageDomain.log"
"serialnum=10001" "model=XP1024" "port=16" "domain=1" "deletionoption=lusekeep"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-3-8 DeleteLogicalUnit

`DeleteLogicalUnit` deletes the logical unit and corresponding LDEV from the storage device (see Table 4-15).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-15 DeleteLogicalUnit Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| devnum | Required | Device number of the LU. |
| model | Required | Model of the storage array of the LU. |
| serialnum | Required | Serial number of the storage array of the LU. |

Command execution example:

```
hdvmcli DeleteLogicalUnit -o "D:\logs\XP12000 DeleteLogicalUnit.log" "serialnum=10001"
"model=XP12000" "devnum=1"
```

Command execution result:

```
RESPONSE:
(Command completed; empty list returned)
```

## 4-3-9 DeleteLUSE

DeleteLUSE deletes a LUSE without any path in the storage device (see Table 4-16).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted LDEVs only: Local System Administrator, Local Storage Administrator

NOTE: This function is not available for the StorageWorks XP512/XP48.

Table 4-16 DeleteLogicalUnit Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| serialnum | Required | Serial number of the storage array from which the LUSE is to be deleted. |
| model | Required | Model of the storage array from which the LUSE is to be deleted. |
| devnums | Required | Device number used to identify the LUSE to be deleted. LUSE device number must be valid in the storage array. |

Command execution example:

```
hdvmcli DeleteLUSE -o "D:\logs\XP1024 DeleteLUSE.log" "serialnum=10001" "model=XP1024"
"devnum=209"
```

Command execution result:

```
RESPONSE:
(Command completed; empty list returned)
```

## 4-3-10 DeleteStorageArray

DeleteStorageArray removes a HP StorageWorks Disk Array from the Device Manager management-target, but does not attempt to change the configuration of any storage device (see Table 4-17).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-17 AddStorageArray Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| serialnum | Required | Serial number of the storage array to be deleted. |
| model | Required | Model of the storage array to be deleted. |

Command execution example:

```
hdvmcli DeleteStorageArray -o "D:\logs\XP1024 DeleteStorageArray.log" "serialnum=10001"
"model=XP1024"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-3-11 GetArrayReservation

`GetArrayReservation` obtains information about a locked storage subsystem. This command does not have parameters.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Local System Administrator, Local Storage Administrator, Guest, Local Guest

NOTE: A Local System Administrator or Local Storage Administrator can obtain information about locked storage subsystems containing accessible LDEVs.

Command execution example:

```
hdvmcli GetArrayReservation -o "D:\logs\GetArrayReservation.log"
```

Command execution result:

```
An instance of ArrayReservation
  objectID=ARRAYRESERVATION.USP.14009
  target=ARRAY.USP.14009
  loginID=dmuser
  beginTime=1,039,003,476
```

## 4-3-12 GetStorageArray

`GetStorageArray` returns information on the storage array.

NOTE: To acquire information about a particular storage subsystem, specify the model in the model parameter, and the serial number in the serialnum parameter, or this command returns information about all of the storage subsystems.

NOTE: To acquire the information about a specific element, or narrow down the range of information acquired by specifying conditions, use the subtarget parameter. For details about values that can be specified, see Table 4-18. You can add parameters according to the value specified in subtarget. However, you cannot add any parameters when component or commparameters is specified.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-18 GetStorageArray Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem.<br>(When you omit this parameter, all the storage subsystems become the target.) |
| `serialnum` | Optional | Serial number of the storage subsystem.<br>(When you omit this parameter, all the storage subsystems become the target.) |
| `subtarget` | Optional | Element of the storage subsystem. The command acquires the information about the specified element.<br>You can specify the following values:<br>`ArrayGroup`, `Commparameters`, `Component`, `Filter`, `FreeSpace`, `HostStorageDomain`, `LDEV`, `LogicalUnit`, `Path`, `PDEV`, `Port`, `PortController`, and `ReplicationInfo`<br>You can add parameters according to the specified element value. |

Command execution example: In this example, the CLI command obtains information about the configuration of all the storage subsystems managed by the Device Manager server:

```
hdvmcli GetStorageArray
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  objectID=ARRAY.HDS9960.10011
  name= XP512@10.208.114.140
  description= XP512 (10011) at 10.208.114.140
  serialNumber=10011
  arrayFamily=HDS9900
  arrayType=HDS9960
  microcodeVersion=01-13-56/00
  agentVersion=02-01-06/00
  productName=XP512
  controllerVersion=01-18-01-00/00
  numberOfControllers=1
  capacityInGB=1,326
  cacheInMB=7,168
  sharedMemoryInMB=-1
  numberOfSpareDrives=-1
  freeCapacityInGB=701
  allocatedCapacityInGB=624
  autoLunCapacityInGB=0
  onDemandCapacityInGB=0
  totalFreeSpaceInGB=124
  largestFreeSpaceInGB=63
  capacityInKB=1,390,713,840
  freeCapacityInKB=735,710,400
  allocatedCapacityInKB=655,003,440
  autoLunCapacityInKB=0
  onDemandCapacityInKB=0
  totalFreeSpaceInKB=130,084,560
  largestFreeSpaceInKB=67,096,800
  multipathSupport=1
  securityStatus=1
  sequenceNumber=10011
  displayArrayFamily=XP512/48
  displayArrayType=XP512
  numberOfLUs=626
  numberOfAllocatedLUs=210
  numberOfUnallocatedLUs=416
  slprStatus=-1
```

## 4-3-12-1 GetStorageArray (subtarget=ArrayGroup)

`GetStorageArray (subtarget=ArrayGroup)` obtains information about one or all array groups in one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-19 GetStorageArray (subtarget=ArrayGroup) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, you will obtain information about the models of all storage subsystems. |

Table 4-19 GetStorageArray (subtarget=ArrayGroup) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| serialnum | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| subtarget | Required | Specify ArrayGroup. |
| objectid | Optional | Object ID of the array group in a storage subsystem. When you omit this parameter, all the array groups become the target. |
| arraygroupsubinfo | Optional | Information obtained about an array group or groups. The only available value is LogicalUnit. |
| lusubinfo | Optional | Information about a logical unit. You can specify Path or LDEV as the value of this parameter. When specifying this parameter, you must also specify the arraygroupsubinfo parameter. |

Command execution example 1: In this example, the CLI command obtains information about all the array groups in a storage subsystem (serial number: 14010, model: XP12000).

```
hdvmcli GetStorageArray -o "D:\logs\XP12000 GetStorageArray_ArrayGroup.log"
subtarget=ArrayGroup model=XP12000 serialnum=14010
```

Command execution result 1:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 20 ArrayGroup elements:
    An instance of ArrayGroup
      objectID=ARRAYGROUP.USP.14010.1.0
      chassis=1
      number=0
      displayName=1-1-1
      raidType=RAID5(3D+1P)
      emulation=OPEN-3
      diskType=DKR2D-J072FC
      diskSize=72
      diskSizeInKB=149,225,472
      controllerID=1
      totalCapacity=203,925,600
      allocatedCapacity=203,925,600
      freeCapacity=0
      autoLunCapacity=0
      onDemandCapacity=0
      totalFreeSpace=9,126,144
      largestFreeSpace=9,126,144
      substance=0
      slprNumber=-1
      clprNumber=-1
      cuInfo=
      openTotalCapacity=203,925,600
      openAllocatedCapacity=203,925,600
      openFreeCapacity=0
      openAutoLunCapacity=0
      openOnDemandCapacity=0
      imTotalCapacity=0
      imAllocatedCapacity=0
      imFreeCapacity=0
      imAutoLunCapacity=0
      imOnDemandCapacity=0
      mfTotalCapacity=0
      mfAutoLunCapacity=0
      mfOnDemandCapacity=0
```

```
      mfAllocatedCapacity=0
      mfUnallocatedCapacity=0
.
. (repeated for other ArrayGroup instances)
.
```

Command execution example 2: In this example, the CLI command obtains information only about one array group (object ID: `ARRAYGROUP.HDS9980V.10001.1.0`) in a storage subsystem (serial number: `10001`, model: `XP1024`).

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_ArrayGroup.log"
subtarget=ArrayGroup model=XP1024 serialnum=10001 objectID=ARRAYGROUP.HDS9980V.10001.1.0
```

Command execution result 2:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 ArrayGroup elements:
    An instance of ArrayGroup
      objectID=ARRAYGROUP.HDS9980V.10001.1.0
      chassis=1
      number=0
      displayName=1-1-1
      raidType=RAID5(3D+1P)
      emulation=OPEN-3
      diskType=DKR2D-J072FC
      diskSize=72
      diskSizeInKB=149,225,472
      controllerID=1
      totalCapacity=203,925,600
      allocatedCapacity=203,925,600
      freeCapacity=0
      autoLunCapacity=0
      onDemandCapacity=0
      totalFreeSpace=9,126,144
      largestFreeSpace=9,126,144
      substance=0
      slprNumber=-1
      clprNumber=-1
      openTotalCapacity=203,925,600
      openAllocatedCapacity=203,925,600
      openFreeCapacity=0
      openAutoLunCapacity=0
      openOnDemandCapacity=0
      imTotalCapacity=0
      imAllocatedCapacity=0
      imFreeCapacity=0
      imAutoLunCapacity=0
      imOnDemandCapacity=0
      mfTotalCapacity=0
      mfAutoLunCapacity=0
      mfOnDemandCapacity=0
      mfAllocatedCapacity=0
      mfUnallocatedCapacity=0
```

### 4-3-12-2 GetStorageArray (subtarget=Commparameters)

`GetStorageArray (subtarget=Commparameters)` obtains information about how to access one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None

- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-20 GetStorageArray (subtarget=Commparameters) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| model | Optional | Model of the storage subsystem. When you omit this parameter, you will obtain information about the models of all storage subsystems. |
| serialnum | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| subtarget | Required | Specify Commparameters. |

Command execution example: In this example, the CLI command obtains information about how to access a storage subsystem (serial number: 10001, model: XP1024).

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_CommParameters.log"
subtarget=CommParameters model=XP1024 serialnum=10001
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 CommParameters elements:
      An instance of CommParameters
      userID=root
      userPassword=hdvm
      ipAddress=172.16.45.1
```

### 4-3-12-3 GetStorageArray (subtarget=Component)

GetStorageArray (subtarget=Component) obtains information about the configuration of one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-21 GetStorageArray (subtarget=Component) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| model | Optional | Model of the storage subsystem. When you omit this parameter, you will obtain information about the models of all storage subsystems. |
| serialnum | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| subtarget | Required | Specify Component. |

Command execution example: In this example, the CLI command obtains information about the configuration of a storage subsystem (serial number: 10011, model: XP512).

```
hdvmcli GetStorageArray -o "D:\logs\XP512 GetStorageArray_Component.log"
subtarget=Component model=XP512 serialnum=10011
```

Command result:

```
RESPONSE:
An instance of StorageArray
  objectID=ARRAY.HDS9960.10011
  name= XP512@10.208.114.140
  description= XP512 (10011) at 10.208.114.140
```

```
  serialNumber=10011
  arrayFamily=HDS9900
  arrayType=HDS9960
  microcodeVersion=01-13-56/00
  agentVersion=02-01-06/00
  productName=XP512
  controllerVersion=01-18-01-00/00
  numberOfControllers=1
  capacityInGB=1,326
  cacheInMB=7,168
  sharedMemoryInMB=-1
  numberOfSpareDrives=-1
  freeCapacityInGB=701
  allocatedCapacityInGB=624
  autoLunCapacityInGB=0
  onDemandCapacityInGB=0
  totalFreeSpaceInGB=124
  largestFreeSpaceInGB=63
  capacityInKB=1,390,713,840
  freeCapacityInKB=735,710,400
  allocatedCapacityInKB=655,003,440
  autoLunCapacityInKB=0
  onDemandCapacityInKB=0
  totalFreeSpaceInKB=130,084,560
  largestFreeSpaceInKB=67,096,800
  multipathSupport=1
  securityStatus=1
  sequenceNumber=10011
  displayArrayFamily= XP512/48
  displayArrayType=XP512
  numberOfLUs=626
  numberOfAllocatedLUs=210
  numberOfUnallocatedLUs=416
  slprStatus=-1
  openTotalCapacity=1,390,713,840
  openAllocatedCapacity=655,003,440
  openFreeCapacity=735,710,400
  openAutoLunCapacity=0
  openOnDemandCapacity=0
  imTotalCapacity=0
  imAllocatedCapacity=0
  imFreeCapacity=0
  imAutoLunCapacity=0
  imOnDemandCapacity=0
  mfTotalCapacity=0
  mfAutoLunCapacity=0
  mfOnDemandCapacity=0
  mfAllocatedCapacity=0
  mfUnallocatedCapacity=0
  numberOfOpenAllocatedLUs=210
  numberOfOpenUnallocatedLUs=416
  numberOfImAllocatedLUs=0
  numberOfImUnallocatedLUs=0
  numberOfMfLDEVs=0
  numberOfAllocatedMfLDEVs=0
  numberOfUnallocatedMfLDEVs=0
  productCode=1
List of 12 Component elements:
    An instance of Component
      name=DKC Battery
      value=1
      description=Normal
    An instance of Component
      name=DKC Cache
      value=1
```

```
    description=Normal
  An instance of Component
    name=DKC Cache Switch
    value=1
    description=Normal
  An instance of Component
    name=DKC Environment
    value=1
    description=Normal
  An instance of Component
    name=DKC Fan
    value=1
    description=Normal
  An instance of Component
    name=DKC Power Supply
    value=1
    description=Normal
  An instance of Component
    name=DKC Processor
    value=1
    description=Normal
  An instance of Component
    name=DKC Shared Memory
    value=1
    description=Normal
  An instance of Component
    name=DKU Drive
    value=1
    description=Normal
  An instance of Component
    name=DKU Environment
    value=1
    description=Normal
  An instance of Component
    name=DKU Fan
    value=1
    description=Normal
  An instance of Component
    name=DKU Power Supply
    value=1
    description=Normal
```

### 4-3-12-4 GetStorageArray (subtarget=Filter)

`GetStorageArray (subtarget=Filter)` obtains the information about a specific component of one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-22 GetStorageArray (subtarget=Filter) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, you will obtain information about the models of all storage subsystems. |
| `serialnum` | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `subtarget` | Required | Specify `Filter`. |

Table 4-22 GetStorageArray (subtarget=Filter) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectID | Required | Object ID of the component of a storage subsystem.<br>The component identified by the object ID you specify with this parameter will be returned. |

Command execution example: In this example, the CLI command obtains information about a logical unit (objectID: LU.HDS9980V.10001.100) that is a component of a storage subsystem (serial number: 10001, model: XP1024).

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_Filter.log" subtarget=Filter
model=XP1024 serialnum=10001 objectID=LU.HDS9980V.10001.100
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 Lu elements:
    An instance of LogicalUnit
      objectID=LU.HDS9980V.10001.100
      devNum=100
      displayName=0:64
      emulation=OPEN-3
      devCount=1
      devType=
      capacityInKB=2,403,360
      path=true
      commandDevice=false
      commandDeviceSecurity=false
      chassis=1
      arrayGroup=16
      raidType=RAID5(3D+1P)
      currentPortController=-1
      defaultPortController=-1
      isComposite=0
      continuousAccessVolumeType=Simplex
      businessCopyVolumeType=Simplex
      snapshotVolumeType=Simplex
      journalVolumeType=Simplex
      sysVolFlag=0
      externalVolume=0
      differentialManagement=0
```

## 4-3-12-5 GetStorageArray (subtarget=FreeSpace)

GetStorageArray (subtarget=FreeSpace) obtains the information about the free space in one or all array groups in one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-23 GetStorageArray (subtarget=FreeSpace) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| model | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |

Table 4-23 GetStorageArray (subtarget=FreeSpace) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `subtarget` | Required | Specify `FreeSpace`. |
| `arraygroupobjid` | Optional | Object ID of an array group that has free space. When you omit this parameter, the command displays the information about all the storage array groups. |

Command execution example 1: In this example, the CLI command obtains information about all the free space in a storage subsystem (serial number: `14010`, model: `XP12000`).

```
hdvmcli GetStorageArray -o "D:\logs\XP12000 GetStorageArray_FreeSpace.log"
subtarget=FreeSpace model=XP12000 serialnum=14010
```

Command execution result 1:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 20 ArrayGroup elements:
    An instance of ArrayGroup
      objectID=ARRAYGROUP.USP.14010.1.0
      chassis=1
      number=0
      displayName=1-1-1
      raidType=RAID5(3D+1P)
      emulation=OPEN-3
      diskType=DKR2D-J072FC
      diskSize=72
      controllerID=1
      totalCapacity=203,925,600
      allocatedCapacity=203,925,600
      freeCapacity=0
      autoLunCapacity=0
      onDemandCapacity=0
      totalFreeSpace=9,126,144
      largestFreeSpace=9,126,144
      slprNumber=-1
      clprNumber=-1
      cuInfo=
      openTotalCapacity=203,925,600
      openAllocatedCapacity=203,925,600
      openFreeCapacity=0
      openAutoLunCapacity=0
      openOnDemandCapacity=0
      imTotalCapacity=0
      imAllocatedCapacity=0
      imFreeCapacity=0
      imAutoLunCapacity=0
      imOnDemandCapacity=0
      mfTotalCapacity=0
      mfAutoLunCapacity=0
      mfOnDemandCapacity=0
      mfAllocatedCapacity=0
      mfUnallocatedCapacity=0
      List of 1 FreeSpace elements:
        An instance of FreeSpace
          objectID=FREESPACE.USP.14010.1.0.85
          sizeInKB=9,126,144
          cylinders=0
```

```
          fsControlIndex=85
      .
      . (repeated for other ArrayGroup instances)
      .
```

Command execution example 2: In this example, the CLI command obtains information about the free space in an array group (objectID: `ARRAYGROUP.HDS9980V.10001.1.16`) that belongs to a storage subsystem (serial number: `10001`, model: `XP1024`).

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_FreeSpace.log"
subtarget=FreeSpace model=XP1024 serialnum=10001
arraygroupobjid=ARRAYGROUP.HDS9980V.10001.1.16
```

Command execution result 2:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 ArrayGroup elements:
    An instance of ArrayGroup
      objectID=ARRAYGROUP.HDS9980V.10001.1.0
      chassis=1
      number=0
      displayName=1-1-1
      raidType=RAID5(3D+1P)
      emulation=OPEN-3
      diskType=DKR2D-J072FC
      diskSize=72
      controllerID=1
      totalCapacity=203,925,600
      allocatedCapacity=203,925,600
      freeCapacity=0
      autoLunCapacity=0
      onDemandCapacity=0
      totalFreeSpace=9,126,144
      largestFreeSpace=9,126,144
      substance=0
      slprNumber=-1
      clprNumber=-1
      openTotalCapacity=203,925,600
      openAllocatedCapacity=203,925,600
      openFreeCapacity=0
      openAutoLunCapacity=0
      openOnDemandCapacity=0
      imTotalCapacity=0
      imAllocatedCapacity=0
      imFreeCapacity=0
      imAutoLunCapacity=0
      imOnDemandCapacity=0
      mfTotalCapacity=0
      mfAutoLunCapacity=0
      mfOnDemandCapacity=0
      mfAllocatedCapacity=0
      mfUnallocatedCapacity=0
      List of 1 FreeSpace elements:
        An instance of FreeSpace
          objectID=FREESPACE.HDS9980V.10001.1.0.85
          sizeInKB=9,126,144
          cylinders=0
          fsControlIndex=85
```

## 4-3-12-6 GetStorageArray (subtarget=HostStorageDomain)

`GetStorageArray (subtarget=HostStorageDomain)` obtains the information about a host storage domain of one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-24 GetStorageArray (subtarget=HostStorageDomain) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `serialnum` | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `subtarget` | Required | Specify `HostStorageDomain`. |
| `domain` | Optional | Domain ID of the host storage domain. When you omit this parameter, all the host storage domains become the target. |
| `hsdsubinfo` | Optional | Specific information about the host storage domain. The values you can specify are `WWN`, `Path`, and `FreeLUN`. If you specify multiple values at the same time, separate the values by commas. |
| `port` | Optional | Number of the port containing the host storage domain. When you omit this parameter, all the host storage domains become the target. |

Command execution example: In this example, the CLI command obtains information about a host storage domain (port number: `3`, domain ID: `1`) in a storage subsystem (serial number: `10001`, model: `XP1024`). The information includes information about the paths, WWNs, and unused LUNs in the host storage domain.

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_HostStorageDomain.log"
subtarget=HostStorageDomain model=XP1024 serialnum=10001 port=23 domain=1
hsdsubinfo=path,wwn,freelun
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 41 HostStorageDomain elements:
    An instance of HostStorageDomain
      objectID=HSDOMAIN.HDS9980V.10001.0.0
      portID=0
      domainID=0
      hostMode=Standard
      displayName=CL1-A-0
      nickname=1A-G00
      List of 256 WWN elements:
        An instance of WWN
          WWN=88.77.77.77.77.77.00.01
          nickname=Jane
        An instance of WWN
          WWN=88.77.77.77.77.77.00.02
          nickname=Jone
            .
            . (repeated for other WWN instances)
            .
      List of 7 FreeLUN elements:
        An instance of FreeLUN
          lun=9
```

```
        An instance of FreeLUN
          lun=10
           .
           . (repeated for other FreeLUN instances)
           .
      List of 249 Path elements:
        An instance of Path
          objectID=PATH.HDS9980V.10001.7.0.10
          devNum=10
          portID=7
          domainID=0
          scsiID=15
          LUN=10
          wwnSecurityValidity=true
           .
           . (repeated for other Path instances)
           .
    An instance of HostStorageDomain
.
. (repeated for other HostStorageDomain instances)
.
```

## 4-3-12-7 GetStorageArray (subtarget=LDEV)

`GetStorageArray (subtarget=LDEV)` obtains the information about an LDEV or LDEVs in one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-25 GetStorageArray (subtarget=LDEV) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `serialnum` | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `subtarget` | Required | Specify `LDEV`. |
| `devnum` | Optional | Device number of the LDEV that you intend to obtain. When you omit this parameter, all the LDEVs become the target. |
| `ldevfilter` | Optional | Filter used for selecting the LDEV. Available values are `OPEN`, `INTERMEDIATE`, and `MAINFRAME`, which are not case-sensitive. To specify two or more values, specify them with a semicolon (;). When you omit this parameter, all LDEVs are displayed. When you specify `OPEN`, the LDEVs for an open volume will be displayed. When you specify `INTERMEDIATE`, the LDEVs for an intermediate volume will be displayed. When you specify `MAINFRAME` , the LDEVs for a mainframe volume will be displayed. When you specify `OPEN;MAINFRAME`, the LDEVs for both the open volume and mainframe volume will be displayed. |
| `ldevsubinfo` | Optional | Information about the LDEV.<br>The value you can specify is `VolumeConnection`. |

Command execution example: In this example, the CLI command obtains information about a specific LDEV (device number: `0`) in a storage subsystem (serial number: `10001`, model:`XP12000`).

```
hdvmcli GetStorageArray -o "D:\logs\XP12000 GetStorageArray_LDEV.log" subtarget=LDEV
model=XP12000 serialnum=10001 devnum=0
"ldevsubinfo=VolumeConnection" "ldevfilter=open"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1756 Ldev elements:
    An instance of LDEV
      objectID=LDEV.USP.10001.0
      devNum=0
      displayName=0:00
      emulation=OPEN-3
      cylinders=0
      isComposite=0
      sizeInKB=2,403,360
      lba=1,201,680
      raidType=RAID5(3D+1P)
      slotSizeInKB=48
      chassis=1
      arrayGroup=0
      path=true
      onDemandDevice=false
      devType=
      isStandardLDEV=true
      guardMode=
      substance=1
      volumeType=3
      diskType=-1
      cacheResidencyMode=-1
      stripeSizeInKB=-1
      slprNumber=-1
      clprNumber=-1
      volumeKind=3
      List of 1 VolumeConnection elements:
         An instance of VolumeConnection
           objectid=VOLCONN.USP.10001.0
           mappedArrayType=USP
           mappedSerialNumber=10001
           mappedDevNum=0
           externalArrayType=HDS9960
           externalSerialNumber=10002
           externalDevNum=150
           externalVolumeName=0096
           productName=1024
           vendor= HP
.
. (repeated for other LDEV instances)
.
```

## 4-3-12-8 GetStorageArray (subtarget=LogicalUnit)

`GetStorageArray (subtarget=LogicalUnit)` obtains the information about a logical unit in a storage subsystem.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-26 GetStorageArray (subtarget=LogicalUnit) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |

Table 4-26 GetStorageArray (subtarget=LogicalUnit) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| serialnum | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| subtarget | Required | Specify LogicalUnit. |
| lufilter | Optional | Filter for selecting a logical unit. Available values are ALL, ASSIGNED, and FREE.<br>When you omit this parameter or specify ALL, you will obtain information about all the logical units.<br>When you specify FREE, you will obtain the information about the logical units that do not have a LUN assigned.<br>When you specify ASSIGNED, you will obtain the information about the logical units that have a LUN assigned. |
| lufilterchildid | Optional | Filter for selecting a logical unit. Specify the objectID of the LDEV.<br>Only the logical units corresponding to the LDEV of the specified objectID are returned. |
| lusubinfo | Optional | Specific information about the logical unit. The values you can specify are Path, LDEV, and VolumeConnection. If you specify multiple values at the same time, separate values by commas. |
| objectid | Optional | Object ID of the logical unit. When you omit this parameter, all the logical units become the target. |
| pathsubinfo | Optional | Specific information about the logical unit path.<br>The value you can specify is WWN, WWNGroup, or HostInfo.<br>When specifying this parameter, you must also specify lusubinfo=Path. |
| ldevsubinfo | Optional | Information about the LDEV. The value you can specify is VolumeConnection.<br>When specifying this parameter, you must also specify the lusubinfo=LDEV. |

Command execution example: In this example, the CLI command obtains information about the logical units in a storage subsystem (serial number: 10001, model: XP12000). The information includes information about the paths to the logical units, the LDEVs used in the logical units, the WWNs of the path, the WWN groups, and the host.

```
hdvmcli GetStorageArray -o "D:\logs\XP12000 GetStorageArray_LogicalUnit.log"
"subtarget=LogicalUnit" "model=XP12000" "serialnum=10001" "lufilter=all"
"lusubinfo=Path,LDEV,VolumeConnection" "pathsubinfo=wwn,wwngroup,hostinfo"
"ldevsubinfo=VolumeConnection"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1752 Lu elements:
    An instance of LogicalUnit
      objectID=LU.USP.10001.100
      devNum=100
      displayName=0:64
      emulation=OPEN-3
      devCount=1
      devType=
      capacityInKB=2,403,360
      path=true
      commandDevice=false
      commandDeviceSecurity=false
      chassis=1
      arrayGroup=16
      raidType=RAID5(3D+1P)
      currentPortController=-1
      defaultPortController=-1
```

```
      isComposite=0
      continuousAccessVolumeType=Simplex
      businessCopyVolumeType=Simplex
      snapshotVolumeType=Simplex
      journalVolumeType=Simplex
      sysVolFlag=0
      externalVolume=1
      differentialManagement=0
      List of 3 Path elements:
        An instance of Path
         .
         . (Attributes of Path are omitted here)
         .
        An instance of Path
         .
         . (Attributes of Path are omitted here)
         .
          List of 2 WWN elements:
            An instance of WWN
              WWN=88.77.77.77.77.77.00.01
              nickname=Jane
            An instance of WWN
              WWN=88.77.77.77.77.77.3F.04
              nickname=Jone
.
. (repeated for other Path instances)
.
      List of 1 Ldev elements:
        An instance of LDEV
          objectID=LDEV.USP.10001.100
          devNum=100
          displayName=0:64
          emulation=OPEN-3
          cylinders=0
          isComposite=0
          sizeInKB=2,403,360
          lba=1,201,680
          raidType=RAID5(3D+1P)
          slotSizeInKB=48
          chassis=1
          arrayGroup=16
          path=true
          onDemandDevice=false
          devType=
          isStandardLDEV=true
          guardMode=
          substance=1
          volumeType=3
          diskType=-1
          cacheResidencyMode=-1
          stripeSizeInKB=-1
          slprNumber=-1
          clprNumber=-1
          volumeKind=3
          List of 1 VolumeConnection elements:
            An instance of VolumeConnection
              objectid=VOLCONN.USP.10001.0
              mappedArrayType=USP
              mappedSerialNumber=10001
              mappedDevNum=100
              externalArrayType=HDS9960
              externalSerialNumber=10002
              externalDevNum=150
              externalVolumeName=0096
              productName=1024
```

```
              vendor= HP
.
. (repeated for other VolumeConnection instances)
.
```

## 4-3-12-9 GetStorageArray (subtarget=Path)

`GetStorageArray (subtarget=Path)` obtains the information about a path in one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-27 GetStorageArray (subtarget=Path) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `serialnum` | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `subtarget` | Required | Specify `Path`. |
| `objectid` | Optional | Object ID of the path. When you omit this parameter, all the paths of storage subsystems become the target. |
| `pathsubinfo` | Optional | Specific information about the path. The values you can specify are `LogicalGroup`, `WWN`, `WWNGroup`, or `HostInfo`. |

Command execution example 1 (objectid parameter not specified): In this example, the CLI command obtains information about all the paths to a storage subsystem (serial number: `10001`, model:`XP1024`). The information includes information about the WWNs of all these paths, the WWN groups, and the host.

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_Path.log" subtarget=Path
model=XP1024 serialnum=10001 pathsubinfo=WWN,WWNGroup,HostInfo
```

Command execution result 1:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 554 Path elements:
    An instance of Path
      objectID=PATH.HDS9980V.10001.0.0.0
      devNum=0
      portID=0
      domainID=0
      scsiID=15
      LUN=0
      wwnSecurityValidity=true
        .
        . (repeated for other Path instances)
        .
    An instance of Path
      objectID=PATH.HDS9980V.10001.7.0.99
      devNum=99
      portID=7
      domainID=0
      scsiID=15
      LUN=99
      wwnSecurityValidity=true
```

```
      List of 256 WWN elements:
       An instance of WWN
         WWN=88.77.77.77.77.77.00.01
         nickname=Jane
       An instance of WWN
         WWN=88.77.77.77.77.77.00.02
         nickname=Jone
.
. (repeated for other WWN instances)
.
```

Command execution example 2 (objectid parameter specified): In this example, the CLI command obtains information about a path (objectID: `PATH.HDS9980V.10001.7.0.99`) that is set for a storage subsystem (serial number: `10001`, model:`XP1024`). The information includes information about the WWNs of this path, the WWN groups, and the host.

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_Path.log" subtarget=Path
model=XP1024 serialnum=10001 objectid=PATH.HDS9980V.10001.7.0.99
pathsubinfo=WWN,WWNGroup,HostInfo
```

Command execution result 2:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 Path elements:
    An instance of Path
      objectID=PATH.HDS9980V.10001.7.0.99
      devNum=99
      portID=7
      domainID=0
      scsiID=15
      LUN=99
      wwnSecurityValidity=true
      List of 2 WWN elements:
        An instance of WWN
          WWN=88.77.77.77.77.77.00.01
          nickname=Jane
        An instance of WWN
          WWN=88.77.77.77.77.77.00.02
          nickname=Jone
```

## 4-3-12-10 GetStorageArray (subtarget=PDEV)

`GetStorageArray (subtarget=PDEV)` obtains the information about a PDEV in one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-28 GetStorageArray (subtarget=PDEV) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `serialnum` | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `subtarget` | Required | Specify `PDEV`. |

Table 4-28 GetStorageArray (subtarget=PDEV) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| arraygroupobjid | Optional | Object ID of the array group containing the PDEVs to be returned. If you intend to obtain the information about the PDEVs in all the array groups, specify ALL. |
| pdevid | Optional | The right-most value of the object ID of the PDEV to be returned.<br>(Among the four elements of the object ID, the right-most one is the ID of the PDEV.)<br>When you omit this parameter, you will obtain information about all the PDEVs. |

The example below shows how an objectID of a PDEV appears in the execution result.

Example:

```
objectID=PDEV.HDS9980V.10001.5
```

The right-most value is 5. Specify this value in the form pdevid=5.

Command execution example: In this example, the CLI command obtains information about a PDEV (PDEV number: 1) belonging to an array group (object ID: ARRAYGROUP.HDS9980V.10001.0.0) that is in a storage subsystem (serial number: 10001, model: XP1024).

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_PDEV.log" subtarget=PDEV
model=XP1024 serialnum=10001 pdevid=1 arraygroupobjid=ARRAYGROUP.HDS9980V.10001.0.0
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 80 PDEV elements:
    An instance of PDEV
      objectID=PDEV.HDS9980V.10001.0
      chassis=1
      arrayGroup=0
      capacityInKB=72,000,000
      row=-1
      column=-1
      depth=-1
      model=DKR2D-J072FC
      dkuType=HDS9900V
      rpm=-1
      diskType=-1
.
. (repeated for other PDEV instances)
.
```

## 4-3-12-11 GetStorageArray (subtarget=Port)

GetStorageArray (subtarget=Port) obtains the information about a port in one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-29 GetStorageArray (subtarget=Port) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| model | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| serialnum | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |

Table 4-29 GetStorageArray (subtarget=Port) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| subtarget | Required | Specify Port. |
| port | Optional | Number of the port of the storage subsystem. When you omit this parameter, you will obtain information about all the ports. |
| portsubinfo | Optional | Specific information about the ports. The value you can specify is WWN, WWNGroup, LUNGroup, or HostStorageDomain. |
| wwngroupsubinfo | Optional | Information obtained from a WWN group. Specify WWNGroup in the parameter portsubinfo when using this parameter. The value you can specify is WWN only. |
| lungroupsubinfo | Optional | Information obtained from a LUN group. Specify LUNGroup in the parameter portsubinfo when using this parameter. The value you can specify is Path only. |
| pathsubinfo | Optional | Information obtained from paths of a LUN group. Specify Path in the parameter lungroupsubinfo when using this parameter. The value you can specify is WWN or WWNGroup. |

Command execution example: In this example, the CLI command obtains information about a port (port number: 7 ) in a subsystem (serial number: 10001, model:XP512) including WWNs, WWN groups, LUN groups, and the host storage domain.

```
hdvmcli GetStorageArray -o "D:\logs\XP512 GetStorageArray_Port.log" subtarget=Port
model=XP512 serialnum=10001 port=7 portsubinfo=WWN,WWNGroup,LUNGroup,HostStorageDomain
wwngroupsubinfo=WWN
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 16 Port elements:
    An instance of Port
      objectID=PORT.HDS9960.10001.0
      portID=0
      portType=Fibre
      fibreAddress=EF
      topology=Fabric(off), FC-AL
      displayName=CL1-A
      lunSecurityEnabled=true
      controllerID=1
      worldWidePortName=50.06.0E.80.03.3A.99.00
      channelSpeed=1
      slprNumber=-1
      portRole=Target
      List of 2 WWN elements:
        An instance of WWN
          WWN=00.00.00.00.00.00.00.01
          nickname=Jane
        An instance of WWN
          WWN=00.00.00.00.00.00.00.50
          nickname=Jone
      List of 2 HostStorageDomain elements:
        An instance of HostStorageDomain
          objectID=HSDOMAIN.HDS9960.10001.0.0
          portID=0
          domainID=0
          hostMode=Standard
          displayName=CL1-A-0
          nickname=1A-G00
        An instance of HostStorageDomain
          objectID=HSDOMAIN.HDS9960.10001.0.1
          portID=0
```

```
          domainID=1
          hostMode=Standard
          displayName=CL1-A-1
          nickname=HCMD0000
      List of 2 WWN elements:
        An instance of WWN
          WWN=00.00.00.00.00.00.00.01
          nickname=Jane
        An instance of WWN
          WWN=00.00.00.00.00.00.00.50
          nickname=Jone
      List of 1 LUNGroup elements
        An instance of LUNGroup
          objectID=LUNGroup.HDS9960.10001.0.0.hp
          name=hp
          nickname=hp
. (repeated for other Port instances)
```

## 4-3-12-12 GetStorageArray (subtarget=PortController)

`GetStorageArray (subtarget=PortController)` obtains the information about a port controller in one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-30 GetStorageArray (subtarget=PortController) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `serialnum` | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `subtarget` | Required | Specify `PortController`. |
| `controllernum` | Optional | Controller ID of the port controller in the subsystem. When you omit this parameter, you will obtain information about all the port controllers. |
| `controllersubinfo` | Optional | Specific information about the port controller you intend to obtain. Available values are `IPAddress` and `PairedPortController`. You can specify either one or both of these values. |

Command execution example 1: In this example, the CLI command obtains information about the port controller for a storage subsystem (serial number: `10001`, model: `XP1024`)

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_PortController.log"
subtarget=PortController model=XP1024 serialnum=10001
```

Command execution result 1:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 4 PortController elements:
    An instance of PortController
      objectID=CONTROLLER.HDS9980V.10001.1
      cluster=1
      card=1
      controllerID=1
```

```
      displayName=CHA-1P
      mode=1
      type=12
  .
  . (repeated for other PortController instances)
  .
```

Command execution example 2: In this example, the CLI command obtains information about the port controller (ID: 1) used for a storage subsystem (serial number `10001`, model `XP1024`)

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray_PortController.log"
subtarget=PortController model=XP1024 serialnum=10001 controllernum=1
```

Command execution result 2:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 PortController elements:
    An instance of PortController
      objectID=CONTROLLER.HDS9980V.10001.1
      cluster=1
      card=1
      controllerID=1
      displayName=CHA-1P
      mode=1
      type=12
```

## 4-3-12-13 GetStorageArray (subtarget=ReplicationInfo)

`GetStorageArray (subtarget=ReplicationInfo)` obtains the information about replication performed by one or all storage subsystems.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: None
- Restricted to permitted resources: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-31 GetStorageArray (subtarget=ReplicationInfo) Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Optional | Model of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `serialnum` | Optional | Serial number of the storage subsystem. When you omit this parameter, all the storage subsystems become the target. |
| `subtarget` | Required | Specify `ReplicationInfo`. |
| `objectid` | Optional | Object ID of the replication information to be returned. When you omit this parameter, you will obtain all the replication information. |
| `replicationsubinfo` | Optional | Specific replication information to be returned. `LogicalUnit` is the only value that you can specify. |

Command execution example: In this example, the CLI command obtains information about the replication performed by a storage subsystem (serial number: `10001`, model: `XP1024`).

```
hdvmcli GetStorageArray -o "D:\logs\XP1024 GetStorageArray ReplicationInfo.log"
subtarget=ReplicationInfo model=XP1024 serialnum=10001
replicationsubinfo=LogicalUnit
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 2 ReplicationInfo elements:
    An instance of ReplicationInfo
      objectID=REPINFO.10001.100.10001.101
      pvolSerialNumber=10001
      pvolArrayType=HDS9980V
      pvolDevNum=100
      pvolObjectID=LU.HDS9980V.10001.100
      pvolPoolID=-1
      svolSerialNumber=10001
      svolArrayType=HDS9980V
      svolDevNum=101
      svolObjectID=LU.HDS9980V.10001.101
      svolPoolID=-1
      replicationFunction=BusinessCopy
      fenceLevel=Data
      status=1
      muNumber=0
      copyTrackSize=15
      splitTime=-1
      List of 2 Lu elements:
        An instance of LogicalUnit
          objectID=LU.HDS9980V.10001.100
          devNum=100
          displayName=0:64
          emulation=OPEN-3
          devCount=1
          devType=
          capacityInKB=2,403,360
          path=true
          commandDevice=false
          commandDeviceSecurity=false
          chassis=1
          arrayGroup=16
          raidType=RAID5(3D+1P)
          currentPortController=-1
          defaultPortController=-1
          isComposite=0
          continuousAccessVolumeType=Simplex
          businessCopyVolumeType=P-VOL
          snapshotVolumeType=Simplex
          journalVolumeType=Simplex
          sysVolFlag=0
          externalVolume=0
          differentialManagement=0
       An instance of LogicalUnit
          objectID=LU.HDS9980V.10001.101
          devNum=101
          displayName=0:65
          emulation=OPEN-3
          devCount=1
          devType=
          capacityInKB=2,403,360
          path=true
          commandDevice=false
          commandDeviceSecurity=false
          chassis=1
          arrayGroup=16
          raidType=RAID5(3D+1P)
          currentPortController=-1
          defaultPortController=-1
```

```
            isComposite=0
            continuousAccessVolumeType=Simplex
            businessCopyVolumeType=S-VOL
            snapshotVolumeType=Simplex
            journalVolumeType=Simplex
            sysVolFlag=0
            externalVolume=0
            differentialManagement=0
.
. (repeated for other ReplicationInfo instances)
.
```

## 4-3-13 ModifyArrayReservation

`ModifyArrayReservation` extends the period of time that can elapse before the target storage subsystem is unlocked (see Table 4.32). Reservation affects only Storage Array Commands and LUN Commands. `GetStorageArray` can be executed for subsystems reserved by another user. The commands listed in section 4-3-1 can be performed under your reservation. If the configuration is not changed and `ModifyArrrayReservation` is not executed, the reservation will expire in 5 minutes. If `ModifyArrrayReservation` is executed, the period of time is reset again to expire in five minutes.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Local System Administrator, Local Storage Administrator, Guest, Local Guest

NOTE: A Local System Administrator or Local Storage Administrator can specify only storage subsystems containing accessible LDEVs. If any other storage subsystems are specified, an error occurs.

Table 4-32 ModifyArrayReservation Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `model` | Required | Model of the storage subsystem. |
| `serialnum` | Required | Serial number of the storage subsystem. |

Command execution example:

```
hdvmcli ModifyArrayReservation -o "D:\logs\ModifyArrayReservation.log" "model=XP12000"
"serialnum=14009"
```

Command execution result:

```
An instance of ArrayReservation
  objectID=ARRAYRESERVATION.USP.14009
  target=ARRAY.USP.14009
  loginID=dmuser
  beginTime=1,039,003,476
```

## 4-3-14 ModifyLogicalUnit

`ModifyLogicalUnit` modifies the LU and its corresponding LDEV in a storage device (see Table 4-33).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Format for the StorageWorks XP12000/XP10000 and StorageWorks XP1024/XP128:

```
hdvmcli [URL] ModifyLogicalUnit [option] serialnum=serial-number model=model
devnum=device-number {commanddevice={true|false}|commanddevicesecurity={true|false}}
```

Format for the StorageWorks XP512/XP48:

```
hdvmcli [URL] ModifyLogicalUnit [option] serialnum=serial-number model=model
devnum=device-number commanddevice={true|false} [commanddevicesecurity={true|false}]
```

NOTE: If you are using a StorageWorks XP512/XP48, check that at least one path is set for the logical unit that is subject to this command's processing.

NOTE: For the StorageWorks XP512/XP48, make sure that one or more paths have been set to the logical unit to which the command executes. If specifying the `commanddevicesecurity` parameter, use it with the commanddevice parameter.

NOTE: For the StorageWorks XP12000/XP10000, and XP1024/XP128, specify at least one of the `commanddevice` and `commanddevicesecurity` commands.

Table 4-33 ModifyLogicalUnit Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array of the LU. |
| `model` | Required | Model of the storage array of the LU. |
| `devnum` | Required | Device number of the LU. |
| `commanddevice` | Optional | New setting for command device. "`true`" = `commanddevice`, "`false`" ≠ `commanddevice`.<br>Specify `true` to set the specified LU as a command device, and `false` to release the setting. |
| `commanddevicesecurity` | Optional | Security mode setting for the command device.<br>Specify `true` to enable security, and `false` to disable it.<br>If you are using a StorageWorks XP512/XP48 and you specify this parameter, you must also specify the `commanddevice` parameter. |

Command execution example:

```
hdvmcli ModifyLogicalUnit -o "D:\logs\XP1024 ModifyLogicalUnit.log" "serialnum=10001"
"model=XP1024" "devnum=1" "commanddevice=true"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
      .
      . (Attributes of StorageArray are omitted here)
      .
  List of 1 Lu elements:
    An instance of LogicalUnit
      objectID=LU.HDS9980V.10001.1
      devNum=1
      displayName=0:01
      emulation=OPEN-3
      devCount=1
      devType=CommandDevice
      capacityInKB=2,403,360
      path=true
      commandDevice=true
      commandDeviceSecurity=true
      chassis=1
      arrayGroup=0
      raidType=RAID5(3D+1P)
      currentPortController=-1
      defaultPortController=-1
      isComposite=0
      continuousAccessVolumeType=Simplex
      businessCopyVolumeType=Simplex
      snapshotVolumeType=Simplex
      journalVolumeType=Simplex
      sysVolFlag=0
      externalVolume=0
      differentialManagement=0
```

## 4-3-15 ModifyPort

`ModifyPort` will change port and host storage domain attributes.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Format for the StorageWorks XP12000/XP10000:

```
hdvmcli [URL] ModifyPort [option] serialnum=serial-number model=model port=port-number
[topology=new-port-topology] [fibreaddr=new-fibre-channel-address-for-the-port]
[channelspeed={0|1|2}] [lunsec={true|false}] [domain=domain-ID] [nickname=new-host-
storage-domain-name] [hostmode=new-host-mode-for-the-port] [hostModeOption=new-host-mode-
option-list]
```

Format for the StorageWorks XP1024/XP128:

```
hdvmcli [URL] ModifyPort [option] serialnum=serial-number model=model port=port-number
[topology=new-port-topology] [fibreaddr=new-fibre-channel-address-for-the-port]
[channelspeed={0|1|2}] [lunsec={true|false}] [domain=domain-ID] [nickname=new-host-
storage-domain-name] [hostmode=new-host-mode-for-the-port]
```

Format for the StorageWorks XP512/XP48:

```
hdvmcli [URL] ModifyPort [option] serialnum=serial-number model=model port=port-number
[topology=new-port-topology] [fibreaddr=new-fibre-channel-address-for-the-port]
[lunsec={true|false}] [domain=domain-ID] [hostmode=new-host-mode-for-the-port]
```

Table 4-34 ModifyPort Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the port's storage array. |
| `model` | Required | Model of the port's storage array. |
| `port` | Required | Number of the port. |
| `topology` | Optional | New topology value for the port.<br>Possible values are as follows.<br>`Fabric(on), FC-AL`<br>`Fabric(off), FC-AL`<br>`Fabric(on), Point-to-Point`<br>`Fabric(off), Point-to-Point` |
| `fibreaddr` | Optional | New fibre channel address for the port (the hex string representation). |
| `channelspeed` | Optional<br>(XP12000/XP10000 and XP1024/XP128 only) | New transmission speed of a fiber channel for the port.<br>For StorageWorks XP12000/XP10000 and XP1024/XP128, you can specify the following values:<br>`0`: automatic<br>`1`: 1 Gb/s<br>`2`: 2 Gb/s |
| `lunsec` | Optional | New setting for LUN security enabled (either "true" or "false"). |
| `domain` | Optional | DomainID of the Host Storage Domain (please refer to the notes). |
| `nickname` | Optional<br>(XP12000/XP10000 and XP1024/XP128) | Specify the nickname of the host storage domain. When you specify this parameter, you must also specify the domain parameter.<br><br>The maximum number of characters that can be used for a nickname is as follows:<br>StorageWorks XP12000/XP10000: 16 bytes<br>DKC microcode version 50-04-01 or later: 32 bytes<br><br>StorageWorks XP1024/128: 8 bytes |

Table 4-34 ModifyPort Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `hostmode` | Optional | New host connect mode value for the port. To change this value, you must specify the domain parameter.<br>For values available to the StorageWorks XP Disk Array, see Table 4-35. |
| `hostModeOption` | Optional<br>(XP12000/XP10000 only) | An option of the host connection mode. To specify two or more options, separate them with semicolons (;).<br>For details on the values that you can specify, see Table 4-36. |

Table 4-35 HostMode Parameter Values (StorageWorks XP Disk Array)

| Storage Subsystem | Available Values for Setting the HostMode Parameter |
|---|---|
| StorageWorks XP12000/XP10000 | Possible values are:<br>`Standard`<br>`Sequent`<br>`HP`<br>`Solaris`<br>`Netware`<br>`Windows`<br>`Windows Extension`<br>`Tru64`<br>`HI-UX`<br>`AIX`<br>`OPEN-VMS`<br>The following value relies on the DKC microcode version.<br>For 50-03-0X-XX/XX or later:<br>`UVM` |
| StorageWorks XP1024/XP128 | Possible values are:<br>`Standard`<br>`Sequent`<br>`HP`<br>`Solaris`<br>`Netware`<br>`Windows`<br>`Windows Extension`<br>`Tru64`<br>`HI-UX`<br>`AIX`<br>`OPEN-VMS`<br>For 21-05-00-XX/XX or later:<br>`Windows Extension`<br>`Solaris Extension`<br>For 21-14-02-XX/XXor later:<br>`Standard Extension2`<br>`HP Extension2`<br>`Solaris Extension2`<br>`Windows Extension2` |
| StorageWorks XP512/XP48 | Possible values are:<br>`Standard`<br>`Sequent`<br>`HP`<br>`Solaris`<br>`Netware`<br>`Windows`<br>`Tru64`<br>`AIX`<br>`OPEN-VMS` |

Table 4-36 lists the hostModeOption parameter values and descriptions:

Table 4-36 hostModeOption Parameter Values and Description

| hostModeOption Values | Description |
|---|---|
| 2 | Specify this value when using VERITAS™ Database Edition/Advanced Cluster for Real Application Clusters or VERITAS™ Cluster Server 4.0 (I/O fencing feature). |
| 6 | Specify this value when all of the following conditions are satisfied:<br>• The host connection mode is set to Windows (mode 0C) or Windows Extension (mode 2C).<br>• An Emulex® host bus adapter is in use.<br>• A mini-port driver is in use.<br>• The TPRLO parameter for the mini-port driver of the host bus adapter is set to 2. |
| 7 | Specify this value when all of the following conditions are satisfied:<br>• The host connection mode is set to Standard (mode 00) or Solaris (mode 09).<br>• You want to let the system automatically recognize the reduction and increase in the number of devices while a SUN™ host bus adapter is in use. |
| 12 | Specify this value when all of the following conditions are satisfied:<br>• The host connection mode is set to HP-UX (mode 03).<br>• You want to prevent devices to which no paths have been defined from creating a device file when the HP-UX host is connected. |
| 13 | Specify this value when you want to get a SIM notification when the number of unsuccessful connections between ports exceeds a threshold. |
| 14 | Specify this value when all of the following conditions are satisfied:<br>• The host connection mode is set to Tru64 (mode 07).<br>• You want to use TruCluster to set up a cluster on both a Continuous Access XP primary and a secondary volume. |

Command execution example: In this example, the CLI command modifies the settings for a port (port number: `16`) of a storage subsystem (serial number: `10001`, model: `XP1024`) as follows. The command:

- changes the value for the hostmode parameter to `Standard`, for the port's host storage domain (domain ID: `0`)
- changes the topology to `Fabric(off), FC-AL`
- sets the Fibre Channel address to `73`
- disables LUN security by specifying `false`
- sets the transmission speed of the Fibre Channel to `1`

```
hdvmcli ModifyPort -o "D:\logs\XP1024 ModifyPort.log" serialnum=10001 model=XP1024
port=16 domain=0 hostmode=Standard "topology=Fabric(off), FC-AL" fibreaddr=73
lunsec=false channelspeed=1
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 Port elements:
    An instance of Port
      objectID=PORT.HDS9980V.10001.16
      portID=16
      portType=Fibre
      fibreAddress=73
      topology=Fabric(off), FC-AL
      displayName=CL2-A
      lunSecurityEnabled=false
      controllerID=5
      worldWidePortName=50.06.0E.80.03.3A.99.10
      channelSpeed=1
      slprNumber=-1
      portRole=Target
      List of 1 HostStorageDomain elements:
        An instance of HostStorageDomain
```

```
          objectID=HSDOMAIN.HDS9980V.10001.16.0
          portID=16
          domainID=0
          nickname=HDvM1000
          hostMode=Standard
```

## 4-3-16 ModifyPortController

`ModifyPortController` supports changing characteristics of a PortController (see Table 4-37).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-37 ModifyPortController Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the port controller's storage array. |
| `model` | Required | Model of the port controller's storage array. |
| `ctrlid` | Required | Number of the port controller. |
| `adaptermode` | Required | New adapter mode value of the port controller. |

Command execution example:

```
hdvmcli ModifyPortController -o "D:\logs\XP1024 ModifyPortController.log"
"serialnum=10001" "model=XP1024" "ctrlid=1" "adaptermode=1"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
          .
          . (Attributes of StorageArray are omitted here)
          .
  List of 1 PortController elements:
    An instance of PortController
      objectID=CONTROLLER.HDS9980V.10001.1
      cluster=1
      card=1
      controllerID=1
      displayName=CHA-1P
      mode=1
      type=12
```

## 4-3-17 RefreshStorageArrays

`RefreshStorageArrays` updates all discovered storage subsystems to their latest state (see Table 4-38).

The storage subsystems created by the Remote Console or Remote Web Console are applied to the Device Manager server database.

By executing this command at regular intervals, you can ensure that the storage subsystem information in the Device Manager server database is up to date.

NOTE: To update one storage subsystem, use the `AddStorageArray` command.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-38 RefreshStorageArrays Command Parameters

| Parameter Name | Status | Description |
|---|---|---|

Table 4-38 RefreshStorageArrays Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| interval | Optional | Interval time in minutes from storage subsystem recovery completion to start of next storage subsystem recovery. You can specify a value from 0 to 2147483647. If it is not set, the default interval time is 0.<br>NOTE: An error is generated if you specify a negative number or if you include the plus (+) sign. |

This command is designed to refresh configuration data for all discovered storage arrays managed by Device Manager. Any storage array reconfigurations made by tools other than Device Manager (e.g., Remote Web Console) will be reflected in the Device Manager Configuration database.

If storage arrays are managed by Device Manager and other tools, you should schedule `RefreshStorageArray` periodically so that the Device Manager Configuration database is kept current.

Command execution example:

```
hdvmcli RefreshStorageArrays -o "D:\logs\RefreshStorageArrays.log" "interval=1"
```

Command execution result:

```
RESPONSE:
[An instance of StorageArray
    .
    . (Attributes of StorageArray are omitted here)
    .
 List of 1 CommParameters elements:
    An instance of CommParameters
    userID=
    userPassword=
    ipAddress2=172.16.50.2
    ipAddress=172.16.50.1
]
[An instance of StorageArray
    .
 (Attributes of StorageArray are omitted here)
    .
  List of 1 CommParameters elements:
     An instance of CommParameters
     snmpWrCommunity=public
     ipAddress=172.16.40.1
     snmpRdCommunity=public
     snmpPort=161
]
   .
   . (repeated for other StorageArray instances)
   .
```

# 4-4 Logical Group Commands

When a group is created, the Device Manager server generates an object ID. In order to use a command that requires an object ID, the ID must be known. When a group is created, the server returns the new group, including the ID. When all groups are retrieved with the `GetLogicalGroup` command, the ID of all groups is provided.

For further information on logical group operations, please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Web Client User Guide*.

## 4-4-1 AddLogicalGroup

`AddLogicalGroup` creates a new logical group, which supports the organization and naming of related devices on the Device Manager server (see Table 4-39). The new group is returned, including the object ID.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator

- No: Guest, Local Guest

Table 4-39 AddLogicalGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| groupname | Required | Name for the new logical group. This must be unique among groups within its parent (if the parent parameter is supplied) or unique among top-level groups (if no parent is specified). |
| iconfile | Required | Name of the icon file that visually represents the new logical group. The specified icons are displayed in the Web Client window.<br>The specifiable icon files are as follows:<br>group_0.gif, group_1.gif, group_2.gif, group_3.gif, group_4.gif, group_5.gif, group_6.gif, group_7.gif, group_8.gif, group_9.gif, group10.gif, group11.gif, group12.gif, group13.gif, group14.gif, group15.gif, group16.gif, group17.gif, group18.gif, group19.gif, group20.gif, group21.gif, group22.gif, group23.gif, group24.gif, group25.gif, group26.gif, group27.gif, group28.gif, group29.gif, group30.gif, group31.gif, group32.gif, group_logical.gif, group_plain.gif, group_storage.gif, group_storage_1.gif, group_storage_2.gif, group_storage_3.gif, group_storage_4.gif, world_logical.gif, world_storage.gif<br>NOTE: If a specified icon file does not exist, the group_plain.gif file is specified. |
| parent | Optional | Object ID of another logical group that contains this new group. This must be the valid ID of a group, and the parent must either contain other groups only or be empty. |

Command execution example 1:

```
hdvmcli AddLogicalGroup -o "D:\logs\AddLogicalGroup.log" "groupname=toro"
"iconfile=group12.gif"
```

Command execution result 1:

```
RESPONSE:
An instance of LogicalGroup
  objectID=GROUP.2
  name=toro
  logicalPath=toro
  icon=group12.gif
  capacity=0
  capacityInKB=0
  realCapacityInKB=0
  percentUsed=0
  numberOfLUNs=0
```

Command execution example 2:

```
hdvmcli AddLogicalGroup -o "D:\logs\AddLogicalGroup.log" "groupname=toro"
"iconfile=group12.gif" "parent=GROUP.0"
```

Command execution result 2:

```
RESPONSE:
An instance of LogicalGroup
  objectID=GROUP.1
  name=toro
  logicalPath=root/toro
  parentID=GROUP.0
  icon=group12.gif
  capacity=0
  capacityInKB=0
  realCapacityInKB=0
  percentUsed=0
  numberOfLUNs=0
```

## 4-4-2 AddLunScan

`AddLunScan` scans a storage array for LUNs not assigned to a logical group (see Table 4-40). It assigns those LUNs to subgroups of the “LUN Scan” group according to port and security. `AddLunScan` creates those subgroups, as necessary, returning the specified storage array, and each of the previously unassigned LUNs.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-40 AddLunScan Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array to scan. |
| `model` | Required | Model of the storage array to scan. |

Command execution example:

```
hdvmcli AddLunScan -o "D:\logs\XP1024 AddLunScan.log" "serialnum=10001" "model=XP1024"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
          .
          . (Attributes of StorageArray are omitted here)
          .
  List of 94 HostStorageDomain elements:
    An instance of HostStorageDomain
      objectID=HSDOMAIN.HDS9980V.10001.0.0
      portID=0
      domainID=0
      hostMode=HP
      displayName=CL1-A-0
      nickname=1A-G00
  .
  . (repeated for other HostStorageDomain instances)
  .
  List of 283 Path elements:
    An instance of Path
      objectID=PATH.HDS9980V.10001.0.0.101
      devNum=101
      portID=0
      domainID=0
      scsiID=15
      LUN=8
      wwnSecurityValidity=true
    .
    . (repeated for other Path instances)
    .
```

## 4-4-3 AddObjectForLogicalGroup

`AddObjectForLogicalGroup` adds one or more existing objects (HostStorageDomain or host) to a specified logical group on the Device Manager server (see Table 4-41).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest

NOTE: If `AddObjectForLogicalGroup` is used with Web Client, Web Client may not display logical groups and hosts.

Table 4-41 AddObjectForLogicalGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Required | Object ID of the logical group. |
| groupelements | Required | Comma-separated list of one or more object IDs of the HostStorageDomains and/or hosts to add to the logical group. |

Command execution example:

```
hdvmcli AddObjectForLogicalGroup -o "D:\logs\XP1024 AddObjectForLogicalGroup.log"
"objectID=GROUP.0" "groupelements=PATH.HDS9980V.10001.0.0.1"
```

Command execution result:

```
RESPONSE:
An instance of LogicalGroup
  objectID=GROUP.1
  name=toro parentID=GROUP.0
  logicalPath=root/toro
  icon=group12.gif
  capacity=0
  capacityInKB=0
  realCapacityInKB=0
  percentUsed=0
  numberOfLUNs=0
  List of 1 GroupElement elements:
    An instance of Path
      objectID=PATH.HDS9980V.10001.0.0.0
      devNum=0
      portID=0
      domainID=0
      scsiID=15
      LUN=0
      wwnSecurityValidity=true
```

## 4-4-4 DeleteLogicalGroup

DeleteLogicalGroup deletes an existing logical group from the Device Manager server (see Table 4-42).

A Guest or Local Guest does not have operational permissions.

Table 4-42 DeleteLogicalGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Required | Object ID of the logical group to be deleted. |

Command execution example:

```
hdvmcli DeleteLogicalGroup -o "D:\logs\DeleteLogicalGroup.log" "objectid=GROUP.0"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-4-5 DeleteObjectForLogicalGroup

DeleteObjectForLogicalGroup removes the specified object or objects from the logical group (see Table 4-43).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest

Table 4-43 DeleteObjectForLogicalGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Required | Object ID of the logical group. |
| groupelements | Required | Comma-separated list of one or more object IDs of the HostStorageDomains and/or hosts to be removed from the logical group. These must be valid IDs of objects currently in the group. |

Command execution example:

```
hdvmcli DeleteObjectForLogicalGroup -o "D:\logs\XP1024 DeleteObjectForLogicalGroup.log"
"objectID=GROUP.0" "groupelements=PATH.HDS9980V.10001.0.0.1"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-4-6 GetLogicalGroup

GetLogicalGroup returns either a specified logical group or a list of all groups (see Table 4-44). By default, the characteristics of the group are provided, but not the group's contents. If you specify a subtarget, the group's contents of the specified types are returned. If a logical group contains other groups, the contained groups cannot be returned with the group. Instead, the relationship between containing and contained groups is determined by the parent attribute of contained groups.

Table 4-44 GetLogicalGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Optional | Object ID of the desired logical group.<br>Omit this parameter to include all logical groups. |
| subtarget | Optional | Comma-delimited list of elements you want to obtain. Possible values are HostStorageDomain, Path and/or Host (not case-sensitive).<br>Omit this parameter to return only logical groups that have no elements. |

Command execution example 1:

```
hdvmcli GetLogicalGroup -o "D:\logs\GetLogicalGroup.log"
"subtarget=Host,HostStorageDomain,path"
```

Command execution result 1:

```
RESPONSE:
An instance of LogicalGroup
  objectID=GROUP.1
  name=toro parentID=GROUP.0
  logicalPath=root/toro
  icon=group12.gif
  capacity=0
  capacityInKB=0
  realCapacityInKB=0
  percentUsed=0
  numberOfLUNs=0
  List of 3 GroupElement elements:
    An instance of Host
      objectID=HOST.1
      name=hit
      ipAddress=192.168.32.63
      capacityInKB=0
      hostType=-1
    An instance of HostStorageDomain
      objectID=HSDOMAIN.HDS9980V.10001.0.0
      portID=0
      domainID=0
      hostMode=HP
      displayName=CL1-A-0
```

```
      nickname=1A-G00
    An instance of Path
      objectID=PATH.HDS9980V.10001.0.0.101
      devNum=101
      portID=0
      domainID=0
      scsiID=15
      LUN=8
      wwnSecurityValidity=true
    .
    . (repeated for other LogicalGroup instances)
    .
```

Command execution example 2:

```
hdvmcli GetLogicalGroup -o "D:\logs\GetLogicalGroup.log" "objectID=GROUP.1"
"subtarget=Host,HostStorageDomain,path"
```

Command execution result 2:

```
RESPONSE:
An instance of LogicalGroup
  objectID=GROUP.1
  name=toro
  parentID=GROUP.0
  logicalPath=root/toro
  icon=group12.gif
  capacity=0
  capacityInKB=0
  realCapacityInKB=0
  percentUsed=0
  numberOfLUNs=0
  List of 3 GroupElement elements:
    An instance of Host
      objectID=HOST.1
      name=hit
      ipAddress=192.168.32.63
      capacityInKB=0
      hostType=-1
    An instance of HostStorageDomain
      objectID=HSDOMAIN.HDS9980V.10001.0.0
      portID=0
      domainID=0
      hostMode=HP
      displayName=CL1-A-0
      nickname=1A-G00
    An instance of Path
      objectID=PATH.HDS9980V.10001.0.0.101
      devNum=101
      portID=0
      domainID=0
      scsiID=15
      LUN=8
      wwnSecurityValidity=true
```

Command execution example 3:

```
hdvmcli GetLogicalGroup -o "D:\logs\GetLogicalGroup.log"
```

Command execution result 3:

```
RESPONSE:
An instance of LogicalGroup
  objectID=GROUP.1
  name=toro
  parentID=GROUP.0
  logicalPath=root/toro
```

```
  icon=group12.gif
  capacity=0
  capacityInKB=0
  realCapacityInKB=0
  percentUsed=0
  numberOfLUNs=0
    .
    . (repeated for other LogicalGroup instances)
    .
```

## 4-4-7 ModifyLogicalGroup

`ModifyLogicalGroup` changes one or more characteristics of an existing logical group (see Table 4-45).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest

Table 4-45 ModifyLogicalGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `objectid` | Required | Object ID of the logical group to be modified. |
| `groupname` | Optional | New name for the specified logical group. This must be either unique among groups within its parent, or if not contained in another group, unique among top-level groups. When you omit this parameter, the group name is not modified. |
| `iconfile` | Optional | Name of the icon file that visually represents the new logical group. When you omit this parameter, the group icon file is not modified.<br>For details about specifiable icon files, see Table 4-39. |
| `parent` | Optional | Object ID of another logical group that contains the specified group. This must be the valid ID of a group and the parent must either contain only other groups or be empty. When you omit this parameter, the group's parent is not modified. |

Command execution example:

```
hdvmcli ModifyLogicalGroup -o "D:\logs\ModifyLogicalGroup.log" "objectid=GROUP.0"
"groupname=snow" "iconfile=group13.gif"
```

Command execution result:

```
RESPONSE:
An instance of LogicalGroup
  objectID=GROUP.0
  name=snow
  parentID=GROUP.0
  logicalPath=root/snow
  icon=group13.gif
  capacity=0
  capacityInKB=0
  realCapacityInKB=0
  percentUsed=0
  numberOfLUNs=0
```

# 4-5 LUN Commands

For further information on LUN operations, please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Web Client User Guide*.

## 4-5-1 AddLun

`AddLun` defines a path from a host to a volume (see Table 4-46). At the time the path is defined, a LUN Expansion (LUSE) logical unit can be specified.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator, Local Storage Administrator

NOTE: For the StorageWorks XP12000/XP10000 and XP1024/XP128, when AddLun adds a LUN whose domain ID is not 0 to the host storage domain, the LUN security of the target port is automatically enabled.

Format for the StorageWorks XP12000/XP10000 and StorageWorks XP1024/XP128:

```
hdvmcli [URL] AddLun [options] serialnum=serial-number model=model-name [name=name]
port=port-number domain=domain-ID [scsi=SCSI-ID] lun=valid-LUN [{devnum=device-
number|lusedevnums=list-of-LDEV-numbers}]
```

Format for the StorageWorks XP512/XP48:

```
hdvmcli [URL] AddLun [options] serialnum=serial-number model=model-name [name=name]
port=port-number domain=domain-ID [scsi=SCSI-ID] lun=valid-LUN [{devnum=device-
number|lusedevnums=list-of-LDEV-numbers}]
```

NOTE: Since the LUSE has already been created by the first AddLUN, the error "LDEV with ID LDEV.HDS9970V.30117.263 is already in another LUSE." has occurred in the second AddLUN with the same lusedevnums. When setting up a LUN (path) to LU to which a LUSE is already set, like the following command, devnum of the representative LDEV which constitutes the LUSE must be specified, and AddLUN must be run.

```
>hdvmcli AddLun serialnum=30117 model=XP128 name=vail11 port=3 domain=0 scsi=15 lun=10
devnum=263
```

Table 4-46 AddLun Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| serialnum | Required | Serial number of the new path's storage array. |
| model | Required | Model of the new path's storage array. |
| name | Optional | Name of the new path. |
| port | Required | Port number of the new path. |
| domain | Required (XP12000/XP10000 and XP1024/XP128)<br>Optional (XP512/XP48) | Domain ID of the new path. Cannot be set when using the wwn parameter. |
| scsi | Optional | SCSI ID of the new path. |
| lun | Required | Actual LUN used for new path. |
| devnum | Optional | Device number used to identify the new path (not provided when a LUSE is defined). |
| lusedevnums (see Note) | Optional | Comma-separated list of LDEV numbers to create a LUSE for the path. Either devnum or lusedevnums must be specified, but not both. |
| wwn | Optional (XP512/XP48) | Comma-separated list of WWN to secure the path. Cannot be set when using domain parameter.<br>This parameter is not valid for the StorageWorks XP12000/XP10000 or StorageWorks XP1024/XP128. |

NOTE: The LUSE is created using the LDEVs of the specified device numbers. The new LUSE is created using only those LDEVs that have the same emulation, sizeInKB, and raidType attributes.

Command execution example 1:

```
hdvmcli AddLun -o "D:\logs\XP512\AddLun.log" "serialnum=10001" "model=XP512" "name=liu"
"port=3" "scsi=15" "lun=127" "lusedevnums=127,128" "wwn=AA.AA.AA.AA.AA.AA.AA.AA"
```

Command execution result 1:

```
RESPONSE:
An instance of StorageArray
         .
         . (Attributes of StorageArray are omitted here)
         .
  List of 1 Path elements:
      objectID=PATH.HDS9960.10001.3.16.127
      name=liu
      devNum=127
      portID=3
      domainID=16
      scsiID=15
      LUN=127
      wwnSecurityValidity=true
      List of 1 WWN elements:
        An instance of WWN
          WWN=AA.AA.AA.AA.AA.AA.AA.AA
          nickname=Jane
      List of 2 Ldev elements:
        An instance of LDEV
          objectID=LDEV.HDS9960.10001.127
          devNum=127
          displayName=0:7F
          emulation=OPEN-8
          cylinders=50
          isComposite=1
          sizeInKB=36,000
          lba=72,000
          raidType=RAID5(3D+1P)
          slotSizeInKB=48
          chassis=1
          arrayGroup=7
          path=true
          onDemandDevice=false
          devType=
          isStandardLDEV=false
          substance=0
          volumeType=3
          cacheResidencyMode=-1
          stripeSizeInKB=-1
          slprNumber=-1
          clprNumber=-1
          volumeKind=3
        An instance of LDEV
          objectID=LDEV.HDS9960.10001.128
          devNum=128
          displayName=0:80
          emulation=OPEN-8
          cylinders=50
          isComposite=1
          sizeInKB=36,000
          lba=72,000
          raidType=RAID5(3D+1P)
          slotSizeInKB=48
          chassis=1
          arrayGroup=7
          path=false
          onDemandDevice=false
          devType=
          isStandardLDEV=false
          substance=0
          volumeType=3
          cacheResidencyMode=-1
          stripeSizeInKB=-1
          slprNumber=-1
```

```
          clprNumber=-1
          volumeKind=3
```

Command execution example 2:

```
hdvmcli AddLun -o "D:\logs\XP1024\AddLun.log" "serialnum=10001" "model=XP1024" "name=hp"
"port=1" "domain=4" "scsi=15" "lun=114"  "lusedevnums=1001,1002"
```

Command execution result 2:

```
RESPONSE:
An instance of StorageArray
      .
      . (Attributes of StorageArray are omitted here)
      .
  List of 1 Path elements:
    An instance of Path
      objectID=PATH.HDS9980V.10001.1.4.1001
      name=hp
      devNum=1,001
      portID=1
      domainID=4
      scsiID=15
      LUN=114
      wwnSecurityValidity=true
      List of 2 Ldev elements:
        An instance of LDEV
          objectID=LDEV.HDS9980V.10001.1001
          devNum=1,001
          displayName=3:E9
          emulation=OPEN-3
          cylinders=0
          isComposite=1
          sizeInKB=2,403,360
          lba=1,201,680
          raidType=RAID5(3D+1P)
          slotSizeInKB=48
          chassis=3
          arrayGroup=16
          path=true
          onDemandDevice=false
          devType=
          isStandardLDEV=true
          guardMode=
          substance=0
          volumeType=3
          diskType=-1
          cacheResidencyMode=-1
          stripeSizeInKB=-1
          slprNumber=-1
          clprNumber=-1
        An instance of LDEV
          objectID=LDEV.HDS9980V.10001.1002
          devNum=1,002
          displayName=3:EA
          emulation=OPEN-3
          cylinders=0
          isComposite=1
          sizeInKB=2,403,360
          lba=1,201,680
          raidType=RAID5(3D+1P)
          slotSizeInKB=48
          chassis=3
          arrayGroup=16
```

```
          path=false
          onDemandDevice=false
          devType=
          isStandardLDEV=true
          guardMode=
          substance=0
          volumeType=3
          diskType=-1
          cacheResidencyMode=-1
          stripeSizeInKB=-1
          slprNumber=-1
          clprNumber=-1
```

Command execution example 3:

```
hdvmcli AddLun -o "D:\logs\XP1024 AddLun.log" "serialnum=10001" "model=XP1024" "name=hp"
"port=1" "domain=4" "scsi=15" "lun=120" "devnum=1006"
```

Command execution result 3:

```
RESPONSE:
An instance of StorageArray
         .
         . (Attributes of StorageArray are omitted here)
         .
  List of 1 Path elements:
    An instance of Path
      objectID=PATH.HDS9980V.10001.1.4.1006
      name=hp
      devNum=1,006
      portID=1
      domainID=4
      scsiID=15
      LUN=120
      wwnSecurityValidity=true
```

## 4-5-2 AddLunGroup

`AddLunGroup` adds a LUN group to a port of the target storage array and adds paths to the LUN group (see Table 4-47).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: `AddLunGroup` is supported by StorageWorks XP512/XP48 storage subsystems only.

Table 4-47 AddLunGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the target storage array to which the LUN group is added. |
| `model` | Required | Model of the target storage array to which the LUN group is added. |
| `port` | Required | Port number of the LUN group. |
| `groupelements` | Required | Comma-separated list of one or more object IDs of the paths to be added to the LUN group. |
| `nickname` | Required | Unique nickname of the LUN group. |
| `name` | Optional | The name given to the LUN group. |

Command execution example:

```
hdvmcli AddLunGroup -o "D:\logs\XP512 AddLunGroup.log" "serialnum=10001" "model=XP512"
"port=19" "groupelements=PATH.HDS9960.10001.16.2.0,PATH.HDS9960.10001.16.2.1"
"nickname=hp" "name=hp"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
         .
         . (Attributes of StorageArray are omitted here)
         .
  List of 1 Port elements:
    An instance of Port
         .
         . (Attributes of Port are omitted here)
         .
    List of 1 LUNGroup elements:
      An instance of LUNGroup
        objectID=LUNGROUP.HDS9960.10001.0.19.hp
        name=hp
        nickname=hp
        List of 2 Path elements:
        An instance of Path
          objectID=PATH.HDS9960.10001.16.2.0
          devNum=0
          portID=19
          domainID=16
          scsiID=15
          LUN=8
          wwnSecurityValidity=true
    .
    . (repeated for other Path instances)
    .
```

## 4-5-3 AddWWNForHostStorageDomain

`AddWWNForHostStorageDomain` secures LUNs in a host storage domain by assigning one or more WWNs to it (see Table 4-48).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: When `AddWWNForHostStorageDomain` secures LUNs in a host storage domain, LUN security is automatically enabled.

Table 4-48 AddWWNForHostStorageDomain Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array for the Host Storage Domain. |
| `model` | Required | Model of the storage array for the Host Storage Domain. |
| `port` | Required | Port ID of the Host Storage Domain. |
| `domain` | Required | Domain ID of the Host Storage Domain. |
| `wwn` | Required | Comma-separated list of WWN to secure the Host Storage Domain. |

Command execution example:

```
hdvmcli AddWWNForHostStorageDomain -o "D:\logs\XP1024 AddWWNForHostStorageDomain.log"
"serialnum=10001" "model=XP1024" "port=1" "domain=1"
```

```
"wwn=22.33.44.55.44.55.44.33,11.33.22.33.44.33.22.22"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
          .
          . (Attributes of StorageArray are omitted here)
          .
  List of 1 HostStorageDomain elements:
    An instance of HostStorageDomain
      objectID=HSDOMAIN.HDS9980V.10001.1.1
      portID=1
      domainID=1
      hostMode=Standard
      displayName=CL1-B-1
      nickname=HCMD0103
      List of 2 WWN elements:
        An instance of WWN
          WWN=22.33.44.55.44.55.44.33
          nickname=Jane
        An instance of WWN
          WWN=11.33.22.33.44.33.22.22
          nickname=Jone
```

## 4-5-4 AddWWNForLun

`AddWWNForLun` secures a path by assigning a WWN to it.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: When `AddWWNForLun` secures a path, LUN security is automatically enabled.

NOTE: This command supports only the StorageWorks XP512/XP48 subsystems.

Table 4-49 AddWWNForLun Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the port's storage array. |
| `model` | Required | Model of the port's storage array. |
| `port` | Required | Port number. |
| `domain` | Required | Domain ID of the path. |
| `devnum` | Required | Device number used to identify the path. |
| `wwn` | Required | Comma-separated list of WWNs to secure the path. |

Command execution example:

```
hdvmcli AddWwnForLun -o "D:\logs\XP512 AddWwnForLun.log" "serialnum=10001" "model=XP512"
"port=16" "devnum=16" "domain=0" "wwn=AA.AA.AA.AA.AA.AA.AA.AA"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
          .
          . (Attributes of StorageArray are omitted here)
          .
  List of 1 Path elements:
```

```
    An instance of Path
      objectID=PATH.HDS9960.10001.16.0.16
      devNum=16
      portID=16
      domainID=0
      scsiID=15
      LUN=16
      wwnSecurityValidity=true
      List of 1 WWN elements:
        An instance of WWN
          WWN=AA.AA.AA.AA.AA.AA.AA.AA
          nickname=Jane
```

## 4-5-5 AddWWNForLunGroup

`AddWWNForLunGroup` secures a LUN group by assigning one or more WWN(s) to it (XP512/XP48 subsystem only) (see Table 4-50). If all of the WWNs in a WWN group are assigned, the WWN group is used to secure the LUN group. If no WWN in a WWN group is assigned, this command will fail. Only new WWNs (none that pre-exist on the port) can be added.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: AddWWNForLunGroup is supported by StorageWorks XP512/XP48 storage subsystems only.

Table 4-50 AddWWNForLunGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array in which the LUN group exists. |
| `model` | Required | Model of the storage array in which the LUN group exists. |
| `port` | Required | Port number of the LUN group. |
| `objectid` | Required | Object ID of the LUN group. |
| `wwn` | Required | Comma-separated list of WWNs to secure the LUN group. |

Command execution example:

```
hdvmcli AddWWNForLunGroup -o "D:\logs\XP512 AddWWNForLUNGroup.log" "serialnum=10001"
"model=XP512" "port=19" "objectid=LUNGROUP.HDS9960.10001.19.hp"
"wwn=11.55.77.99.33.00.22.66,AA.AA.AA.AA.AA.AA.AA.AA"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
          .
          . (Attributes of StorageArray are omitted here)
          .
  List of 1 Port elements:
    An instance of Port
          .
          . (Attributes of Port are omitted here)
          .
    List of 1 LUNGroup elements:
      An instance of LUNGroup
        objectID= LUNGROUP.HDS9960.10001.0.19.hp
        name=hp
        nickname=hp
        List of 2 WWN elements:
        An instance of WWN
```

```
        WWN=11.55.77.99.33.00.22.66
    .
    . (repeated for other Path instances)
    .
```

## 4-5-6 AddWWNGroup

`AddWWNGroup` adds a WWN group to a target storage array port (XP512/XP48 subsystem only) and two or more WWN(s) to the WWN group (see Table 4-51). The maximum number of WWNs in a port WWN group is 127. Only new WWNs (none that pre-exist on the port) can be added.

A maximum of 127 WWN groups can be set to a port. As the WWNs to be grouped into a WWN group, you can specify only the WWNs already set for a port or newly created WWNs. The WWNs that you have newly specified will be added to the port. You cannot add a WWN that belongs to a different WWN group, or to a different LUN or LUN group.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: `AddWWNGroup` is supported by StorageWorks XP512/XP48 storage subsystems only.

Table 4-51 AddWWNGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the target storage array to which the WWN group is added. |
| `model` | Required | Model of the target storage array to which the WWN group is added. |
| `port` | Required | Port number of the WWN group. |
| `wwn` | Required | Comma-separated list of WWNs to be added to the WWN group. |
| `nickname` | Required | A unique nickname of the WWN group. |
| `name` | Optional | The name given to the WWN group. |

Command execution example:

```
hdvmcli AddWWNGroup -o "D:\logs\XP512 AddWWNGroup.log" serialnum=10001 model=XP512
port=19 wwn=11.55.77.99.33.00.22.66,AA.AA.AA.AA.AA.AA.AA.AA nickname=hp name=hp
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
  .
  . (Attributes of StorageArray are omitted here)
  .
  List of 1 Port elements:
    An instance of Port
  .
  . (Attributes of Port are omitted here)
  .
    List of 1 WWNGroup elements:
      An instance of WWNGroup
        objectID=WWNGROUP.HDS9960.10001.0.19.hp
        name=hp
        nickname=hp
        List of 2 WWN elements:
        An instance of WWN
          WWN= AA.AA.AA.AA.AA.AA.AA.AA
          nickname=Jane
        An instance of WWN
          WWN= BB.BB.BB.BB.BB.BB.BB.BB
```

```
nickname=Jone
```

## 4-5-7 DeleteLun

`DeleteLun` deletes a path from a host to a volume (see Table 4-52). If the LUN is secured, the corresponding WWN is required.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator, Local Storage Administrator

Table 4-52 DeleteLun Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the path's storage array. |
| `model` | Required | Model of the path's storage array. |
| `port` | Required | Port number of the path. |
| `domain` | Required | Domain ID of the path. |
| `devnum` | Required | Device number used to identify the path. |
| `deletionoption` | Optional | Only value possible: "`lusekeep`", which is not case-sensitive. Omit this parameter to delete a LUSE. |

Command execution example:

```
hdvmcli DeleteLun -o "D:\logs\XP1024 DeleteLun.log" "serialnum=10001" "model=XP1024"
"port=1" "domain=1" "devnum=1" "deletionoption=lusekeep"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-5-8 DeleteLunGroup

`DeleteLunGroup` deletes a LUN group assigned to a port (XP512/XP48 subsystem only); any LUNs (paths) in the group are not deleted (see Table 4-53). A WWN can be specified, and access is removed for just that WWN.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: `DeleteLunGroup` is supported by StorageWorks XP512/XP48 storage subsystems only.

Table 4-53 DeleteLunGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the LUN group's storage array. |
| `model` | Required | Model of the LUN group's storage array. |
| `port` | Required | ID for the port of LUN group to be deleted. |
| `lungroupid` | Required | Object ID of the LUN group to be deleted. |

Command execution example:

```
hdvmcli DeleteLunGroup -o "D:\logs\XP512 DeleteLunGroup.log" "serialnum=10011"
```

```
"model=XP512" "port=19" "lungroupid=LUNGROUP.HDS9960.10011.19.LG00"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-5-9 DeleteWWN

`DeleteWWN` removes a WWN from a port (see Table 4-54).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Table 4-54 DeleteWWN Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the port's storage array. |
| `model` | Required | Model of the port's storage array. |
| `port` | Required | Port number. |
| `wwn` | Required | WWN to be deleted from the port. |

Command execution example:

```
hdvmcli DeleteWWN -o "D:\logs\XP1024 DeleteWWN.log" "serialnum=10001" "model=XP1024"
"port=0" "wwn=11.22.33.22.44.55.33.11"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-5-10 DeleteWWNForHostStorageDomain

`DeleteWWNForHostStorageDomain` removes security for LUNs that are under a specified HostStorageDomain. The HostStorageDomain must already exist and be secured (see Table 4-55).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Table 4-55 DeleteWWNForHostStorageDomain Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array for the Host Storage Domain. |
| `model` | Required | Model of the storage array for the Host Storage Domain. |
| `port` | Required | Port ID of the Host Storage Domain. |
| `domain` | Required | Domain ID of the Host Storage Domain. |
| `wwn` | Required | Comma-separated list of WWN to unsecure the Host Storage Domain. |

Command execution example:

```
hdvmcli DeleteWWNForHostStorageDomain -o "D:\logs\XP1024
DeleteWWNForHostStorageDomain.log" "serialnum=10001" "model=XP1024" "port=1" "domain=1"
"wwn=A.AA.AA.AA.AA.AA.AA.AA"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-5-11 DeleteWWNForLun

`DeleteWWNForLun` removes access to a WWN path (see Table 4-56).

NOTE: This command is available only to users of the StorageWorks XP512/XP48.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Table 4-56 DeleteWWNForLun Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the port's storage array. |
| `model` | Required | Model of the port's storage array. |
| `port` | Required | Port number. |
| `domain` | Required | Domain ID of the path. |
| `devnum` | Required | Device number used to identify the path. |
| `wwn` | Required | Comma-separated list of WWNs for which path security is to be removed. |

Command execution example:

```
hdvmcli DeleteWwnForLun -o "D:\logs\XP512 AddWwnForLun.log" "serialnum=10001"
"model=XP512" "port=16" "devnum=16" "domain=0" "wwn=11.55.77.99.33.00.22.66"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-5-12 DeleteWWNForLunGroup

`DeleteWWNForLunGroup` removes one or more WWN(s) from a LUN group (XP512/XP48 subsystem only) (see Table 4-57).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: `DeleteWWNForLunGroup` is supported by StorageWorks XP512/XP48 storage subsystems only.

Table 4-57 DeleteWWNForLunGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array in which the LUN group exists. |
| `model` | Required | Model of the storage array in which the LUN group exists. |
| `port` | Required | Port number of the LUN group. |
| `objectid` | Required | Object ID of the LUN group. |

Table 4-57 DeleteWWNForLunGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| wwn | Required | Comma-separated list of WWNs that exist in the LUN group. |

Command execution example:

```
hdvmcli DeleteWWNForLunGroup -o "D:\logs\XP512 DeleteWWNForLUNGroup.log"
"serialnum=10001" "model=XP512" "port=19" "objectid=LUNGROUP.HDS9960.10001.19.hp"
"wwn=11.55.77.99.33.00.22.66,AA.AA.AA.AA.AA.AA.AA.AA"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-5-13 DeleteWWNGroup

`DeleteWWNGroup` removes a WWN group from a port (XP512/XP48 subsystem only) (see Table 4-58). The corresponding WWNs are not removed from the port.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: `DeleteWWNGroup` is supported by StorageWorks XP512/XP48 storage subsystems only.

Table 4-58 DeleteWWNGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| serialnum | Required | Serial number of the port's storage array. |
| model | Required | Model of the port's storage array. |
| port | Required | Port number. |
| wwngroup | Required | Nickname of the WWN group to be deleted from the port. |

Command execution example:

```
hdvmcli DeleteWwnGroup -o "D:\logs\XP512 DeleteWwnGroup.log" "serialnum=10011"
"model=XP512" "port=19" "wwngroup=WG"
```

Command execution result:

```
RESPONSE:
(Command completed; no data returned)
```

## 4-5-14 ModifyLunGroup

`ModifyLunGroup` modifies a LUN group assigned to a port of the target storage array (XP512/XP48 subsystem only) and adds paths in the LUN group (see Table 4-59).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: `ModifyLunGroup` is supported by StorageWorks XP512/XP48 storage subsystems only.

Table 4-59 ModifyLunGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array in which the LUN group exists. |
| `model` | Required | Model of the storage array in which the LUN group exists. |
| `port` | Required | Port number of the LUN group. |
| `objectid` | Required | Object ID of the LUN group. |
| `groupelements` | Required | Comma-separated list of one or more object IDs of the paths to be added to the LUN group. |
| `nickname` | Optional | Unique nickname of the LUN group. |
| `name` | Optional | The name given to the LUN group. |

Command execution example:

```
hdvmcli ModifyLunGroup -o "D:\logs\XP512 ModifyLunGroup.log" "serialnum=10001"
"model=XP512" "port=19"
"groupelements=PATH.HDS9960.10001.16.2.0,PATH.HDS9960.10001.16.2.1"
"objectid=LUNGROUP.HDS9960.10001.19.hp" "nickname=hp"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
      .
      . (Attributes of StorageArray are omitted here)
      .
  List of 1 Port elements:
    An instance of Port
      .
      . (Attributes of Port are omitted here)
      .
    List of 1 LUNGroup elements:
      An instance of LUNGroup
        objectID= LUNGROUP.HDS9960.10001.0.19.hp
        nickname=hp
        List of 2 Path elements:
        An instance of Path
          objectID=PATH.HDS9960.10001.16.2.0
          devNum=0
          portID=19
          domainID=16
          scsiID=15
          LUN=8
          wwnSecurityValidity=true
    .
    . (repeated for other Path instances)
    .    .
```

## 4-5-15 ModifyWWNGroup

`ModifyWWNGroup` modifies a WWN group assigned to a target storage array port (XP512/XP48 subsystem only) and adds two or more WWN(s) to the WWN group (see Table 4-60).

A maximum of 127 WWN groups can be set for a port. Only the existing WWNs already used for the port can be changed. You cannot change a WWN that belongs to a different WWN group, or to a different LUN or LUN group.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator

- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: `ModifyWWNGroup` is supported by StorageWorks XP512/XP48 storage subsystems only.

Table 4-60 ModifyWWNGroup Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the storage array in which the WWN group exists. |
| `model` | Required | Model of the storage array in which the WWN group exists. |
| `port` | Required | Port number of the WWN group. |
| `objectid` | Required | Object ID of the WWN group. |
| `wwn` | Required | Comma-separated list of WWNs to be added to the WWN group. |
| `nickname` | Optional | Unique nickname of the WWN group. |
| `name` | Optional | The name given to the WWN group. |

Command execution example:

```
hdvmcli ModifyWWNGroup -o "D:\logs\XP512 ModifyWWNGroup.log" "serialnum=10001"
"model=XP512" "port=19" "objectid=WWNGROUP.HDS9960.10001.19.hp"
"wwn=AA.AA.AA.AA.AA.AA.AA.AA,BB.BB.BB.BB.BB.BB.BB.BB" "nickname=hp"
```

Command execution result:

```
RESPONSE:
An instance of StorageArray
      .
      . (Attributes of StorageArray are omitted here)
      .
  List of 1 Port elements:
    An instance of Port
      .
      . (Attributes of Port are omitted here)
      .
    List of 1 WWNGroup elements:
      An instance of WWNGroup
        objectID=WWNGROUP.HDS9960.10001.0.19.hp
        nickname=hp
        List of 2 WWN elements:
        An instance of WWN
          WWN=AA.AA.AA.AA.AA.AA.AA.AA
          nickname=Jane
        An instance of WWN
          WWN=BB.BB.BB.BB.BB.BB.BB.BB
          nickname=Jone
```

# 4-6 Host Management Commands

The following commands support the management of hosts and their `HostInfo` records. `HostInfo` is the information about the storage that is used by hosts. Although typically Device Manager agents produce `HostInfo` records, they can be manually created by these commands. Some commands require a host's server-generated object ID.

For further information on host operations, please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Web Client User Guide*.

## 4-6-1 AddHost

`AddHost` adds information about a host server to the Device Manager server (see Table 4-61).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local System Administrator, Local Storage Administrator, Local Guest

Table 4-61 AddHost Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `hostname` | Required | Name of the new host. |
| `wwnlist` | Optional | Comma-separated list of WWNs. |
| `ipaddress` | Optional | IP address of the new host. |

Command execution example:

```
hdvmcli AddHost -o "D:\logs\AddHost.log" "hostname=toro2"
"wwnlist=AA.CC.CC.CC.CC.CC.CC.CC,00.CC.CC.CC.CC.CC.CC.CC" "ipaddress=192.168.32.63"
```

Command execution result:

```
RESPONSE:
An instance of Host
  objectID=HOST.279
  name=toro2
  ipAddress=192.168.32.63
  capacityInKB=0
  hostType=-1
```

## 4-6-2 AddHostInfo

`AddHostInfo` adds host-based information on a LUN (information on storage used by hosts (see Table 4-62).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: A Local System Administrator and Local Storage Administrator can specify HostInfo for an operational host.

Table 4-62 AddHostInfo Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `serialnum` | Required | Serial number of the path's storage array. |
| `model` | Required | Model of the path's storage array. |
| `hostname` | Required | Name of the host. |
| `ipaddress` | Optional | IP address of the host. |
| `mountpoint` | Optional | Mount point on the host file system corresponding to the path. |
| `port` | Required | Port that the path is on. |
| `domain` | Required | Domain ID of the path. |
| `devnum` | Required | Device number of the path. |
| `osscsibus` | Required | Host SCSI bus number. |
| `osscsiid` | Required | Virtualized host SCSI ID. |
| `oslun` | Required | Virtualized host LUN. |

Table 4-62 AddHostInfo Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| portwwn | Optional | Port WWN on the host bus adapter. |
| filetype | Optional | Type of the file System. |
| filename | Optional | Name of the file System. |
| size | Optional | LUN size in MB. |
| percentused | Optional | Percent of the LUN in use. |

In this example, the CLI command specifies the following information for the host that connects to a LUN (device number: 2, port number: 7, domain ID: 0) in a storage subsystem (serial number: 10001, model: XP1024):

- Host name: MY_HOSTINFO_XP1024
- Host IP address: 172.16.64.159
- Mount point: C:
- File system type: NTFS
- File name: C:
- SCSI bus number: 0
- Host LUN: 1
- HBA WWN: 11.22.33.44.55.66.77.88
- LUN size: 10MB
- LUN in use: 10%

Command execution example:

```
hdvmcli AddHostInfo -o "D:\logs\XP1024 AddHostInfo.log" serialnum=10001 model=XP1024
hostname=MY_HOSTINFO_XP1024 ipaddress=172.16.64.159 mountpoint=C: port=7 domain=0
devnum=2 osscsibus=0 osscsiid=15 oslun=1 portwwn=11.22.33.44.55.66.77.88 filetype=NTFS
filename=C: size=10 percentused=10
```

Command execution result:

```
RESPONSE:
An instance of HostInfo
  objectID=HOSTINFO.MY_HOSTINFO_XP1024.0.15.1
  name=MY_HOSTINFO_XP1024
  serialNumber=10001
  arrayType=HDS9980V
  ipAddress=172.16.64.159
  mountPoint=C:
  portID=7
  domainID=0
  scsiID=15
  lun=2
  devNum=2
  osScsiBus=0
  osScsiID=15
  osLun=1
  portWWN=11.22.33.44.55.66.77.88
  fileSystemType=NTFS
  fileSystemName=C:
  sizeInMB=10
  percentUsed=10
  lastUpdated=1039003476
```

## 4-6-3 AddHostRefresh

AddHostRefresh refreshes the information about the hosts that Device Manager manages, which is obtained from the Device Manager agent.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator, Local Storage Administrator

Table 4-63 AddHostRefresh Command Parameter

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Required | Specify the object ID of the target host. |

In this example, the CLI command obtains the latest information about the host where an object ID is HOST.5.

Command execution example:

```
hdvmcli  AddHostRefresh  -o  "D:\logs\AddHostRefresh.log"  "objectid=HOST.5"
```

Command execution result:

```
RESPONSE:
An instance of Host
  objectID=Host.5
  name=rise
  ipAddress=192.168.32.164
  capacityInKB=0
  hostType=-1
```

## 4-6-4 DeleteHost

`DeleteHost` deletes information about a host server from the Device Manager server (see Table 4-64).

NOTE: DeleteHost does not delete the host information from the External port.

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator, Local Storage Administrator

Table 4-64 DeleteHost Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Required | Object ID of the host to be removed. |

Command execution example:

```
hdvmcli DeleteHost -o "D:\logs\DeleteHost.log" "objectID=HOST.1"
```

Command execution result:

```
RESPONSE
(Command completed; no data returned)
```

## 4-6-5 DeleteHostInfo

`DeleteHostInfo` deletes a HostInfo instance from the Device Manager server (see Table 4-65).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: A Local System Administrator and Local Storage Administrator can specify `HostInfo` for a permitted host.

Table 4-65 DeleteHostInfo Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Required | Object ID of the HostInfo record to be removed. |

Command execution example:

```
hdvmcli DeleteHostInfo -o "D:\logs\XP1024 DeleteHostInfo.log"
"objectid=HOSTINFO.MY_HOSTINFO_XP1024.0.15.1"
```

Command execution result:

```
RESPONSE
(Command completed; no data returned)
```

## 4-6-6 GetHost

GetHost returns the information about one or all host servers (see Table 4-66).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator, Local Storage Administrator

NOTE: If you do not know the object ID of the required host, you can obtain information about all the hosts by executing the GetHost command without specifying this parameter.

Table 4-66 GetHost Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Optional | Object ID of the host for which information is to be returned. Omit this parameter to include all hosts. |
| configfileid | Optional | Object ID of the Continuous Access XP configuration definition file in the host. If you omit this parameter, the command acquires information about all Continuous Access XP configuration definition files contained in the host. When you specify this parameter, you must also specify the objectid parameter. |
| replicationgroupid | Optional | ID of the copy group associated with the host (ReplicationGroup). When you specify this parameter, you must specify the objectid and configfileid parameters. |

Command execution example 1: This example obtains the pair information defined in the CCI configuration definition file whose configFileID is CONFIGFILE.1.11 in the host whose objectID is HOST.1.

```
hdvmcli GetHost -o "D:\logs\GetHost.log" "objectid=HOST.1" configFileID=CONFIGFILE.1.11
```

Command execution result 1:

```
RESPONSE:
An instance of Host
  objectID=HOST.1
  name=toro2
  ipAddress=192.168.32.63
  capacityInKB=0
  hostType=-1
  List of 2 WWN elements:
    An instance of WWN
      WWN=00.99.66.33.88.55.22.77
      nickname=Jane
    An instance of WWN
      WWN=11.44.77.22.55.88.33.66
      nickname=Jone
  List of 1 ConfigFile elements:
    An instance of ConfigFile
```

```
      objectID=CONFIGFILE.1.11
      instanceNumber=11
      controlledBy=Device Manager
      portNumber=50000
      valid=1
    List of 1 ReplicationGroup elements:
      An instance of ReplicationGroup
        objectID=REPGROUP.3
        replicationGroupID=3
        groupName=HCMD_CG0003
        pvolHostID=1
        pvolInstanceNumber=11
        pvolPortNumber=50,000
        svolHostID=2
        svolInstanceNumber=12
        svolPortNumber=50,001
        replicationFunction=BusinessCopy
        copyTrackSize=15
        List of 2 ReplicationInfo elements:
          An instance of ReplicationInfo
            objectID=REPINFO.65010001.11.65010001.12
            pairName=HCMD_CP0001
            pvolSerialNumber=65010001
            pvolArrayType=HDS9570V
            pvolDevNum=11
            pvolObjectID=LU.HDS9570V.65010001.11
            pvolPoolID=-1
            svolSerialNumber=65010001
            svolArrayType=HDS9570V
            svolDevNum=12
            svolObjectID=LU.HDS9570V.65010001.12
            svolPoolID=-1
            replicationFunction=BusinessCopy
            status=8
            muNumber=0
            copyTrackSize=15
            splitTime=-1
          An instance of ReplicationInfo
            objectID=REPINFO.65010001.1012.65010001.102
            pairName=HCMD_CP0002
            pvolSerialNumber=65010001
            pvolArrayType=HDS9570V
            pvolDevNum=101
            pvolObjectID=LU.HDS9570V.65010001.101
            pvolPoolID=-1
            svolArrayType=HDS9570V
            svolSerialNumber=65010001
            svolDevNum=102
            svolObjectID=LU.HDS9570V.65010001.102
            svolPoolID=-1
            replicationFunction=BusinessCopy
            status=1
            muNumber=0
            copyTrackSize=15
            splitTime=-1
```

Command execution example 2:

```
hdvmcli GetHost -o "D:\logs\GetHost.log"
```

Command execution result 2:

```
RESPONSE:
An instance of Host
  objectID=HOST.1
  name=toro2
```

```
ipAddress=192.168.32.63
capacityInKB=0
hostType=-1
List of 2 WWN elements:
  An instance of WWN
    WWN=00.99.66.33.88.55.22.77
    nickname=Jane
  An instance of WWN
    WWN=11.44.77.22.55.88.33.66
    nickname=Jone
    List of 1 ConfigFile elements:
  An instance of ConfigFile
    objectID=CONFIGFILE.1.11
    instanceNumber=11
    controlledBy=Device Manager
    portNumber=50,000
    valid=1
  List of 1 ReplicationGroup elements:
    An instance of ReplicationGroup
      objectID=REPGROUP.3
      replicationGroupID=3
      groupName=HCMD_CG0003
      pvolHostID=1
      pvolInstanceNumber=11
      pvolPortNumber=50,000
      svolHostID=3
      svolInstanceNumber=12
      svolPortNumber=50,001
      replicationFunction=BusinessCopy
      copyTrackSize=15
      List of 2 ReplicationInfo elements:
        An instance of ReplicationInfo
          objectID=REPINFO.65010001.11.65010001.12
          pairName=HCMD_CP0001
          pvolSerialNumber=65010001
          pvolArrayType=HDS9570V
          pvolDevNum=11
          pvolObjectID=LU.HDS9570V.65010001.11
          pvolPoolID=-1
          svolSerialNumber=65010001
          svolArrayType=HDS9570V
          svolDevNum=12
          svolObjectID=LU.HDS9570V.65010001.12
          svolPoolID=-1
          replicationFunction=BusinessCopy
          status=8
          muNumber=0
          copyTrackSize=15
          splitTime=-1
        An instance of ReplicationInfo
          objectID=REPINFO.65010001.1012.65010001.102
          pairName=HCMD_CP0002
          pvolSerialNumber=65010001
          pvolArrayType=HDS9570V
          pvolDevNum=101
          pvolObjectID=LU.HDS9570V.65010001.101
          pvolPoolID=-1
          svolArrayType=HDS9570V
          svolSerialNumber=65010001
          svolDevNum=102
          svolObjectID=LU.HDS9570V.65010001.102
          svolPoolID=-1
          replicationFunction=BusinessCopy
          status=1
          muNumber=0
```

```
            copyTrackSize=15
            splitTime=-1
```

## 4-6-7 GetHostInfo

`GetHostInfo` returns either a selected `HostInfo` record or all the `HostInfo` on the Device Manager server (see Table 4-67).

The name of the host that does not have access privileges is displayed as n/a.

Table 4-67 GetHostInfo Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `objectid` | Optional | Object ID of the HostInfo record to be retrieved. Omit this parameter to return all HostInfo records. |

NOTE: If you do not know the object ID of the required `HostInfo` record, you can obtain information about all the `HostInfo` records by executing the `GetHostInfo` command.

Command execution example 1:

```
hdvmcli GetHostInfo -o "D:\logs\XP1024 GetHostInfo.log"
"objectid=HOSTINFO.MY_HOSTINFO_XP1024.0.15.1"
```

Command execution result 1:

```
RESPONSE
An instance of HostInfo
  objectID=HOSTINFO.HIS_HOSTINFO_XP1024.0.15.1
  name=HIS_HOSTINFO_XP1024
  serialNumber=10001
  arrayType=HDS9980V
  ipAddress=172.16.64.159
  mountPoint=C:
  portID=7
  domainID=0
  scsiID=15
  lun=3
  devNum=3
  osScsiBus=0
  osScsiID=15
  osLun=1
  portWWN=11.22.33.44.55.66.77.88
  fileSystemType=NTFS
  fileSystemName=C:
  sizeInMB=10
  percentUsed=10
  lastUpdated=1039003852
```

Command execution example 2:

```
hdvmcli GetHostInfo -o "D:\logs\XP1024 GetHostInfo.log"
```

Command execution result 2:

```
RESPONSE
An instance of HostInfo
  objectID=HOSTINFO.HIS_HOSTINFO_XP1024.0.15.1
  name=HIS_HOSTINFO_XP1024
  serialNumber=10001
  arrayType=HDS9980V
  ipAddress=172.16.64.159
  mountPoint=C:
  portID=7
  domainID=0
  scsiID=15
  lun=3
```

```
  devNum=3
  osScsiBus=0
  osScsiID=15
  osLun=1
  portWWN=11.22.33.44.55.66.77.88
  fileSystemType=NTFS
  fileSystemName=C:
  sizeInMB=10
  percentUsed=10
  lastUpdated=1039003852
.
. (repeated for other HostInfo instances)
.
```

## 4-6-8 ModifyHost

ModifyHost modifies information about a host server (see Table 4-68).

NOTE: ModifyHost cannot change WWN information for the external port of a host.

A Guest or Local Guest does not have operational permissions. A Local System Administrator and Local Storage Administrator can specify the allowed hosts only. If other hosts that are not allowed are specified, an error occurs.

Table 4-68 ModifyHost Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `objectid` | Required | Object ID of the host to be modified. |
| `hostname` | Optional | New name for the existing host. Omit this parameter if you do not want to change the name. |
| `wwnlist` | Optional | Comma-separated list of WWNs to replace existing WWNs. When you omit this parameter, all WWNs in the host will be deleted. |
| `ipaddress` | Optional | New IP address for the existing host. Omit this parameter if you do not want to change the host IP address. |

Command execution example:

```
hdvmcli ModifyHost -o "D:\logs\ModifyHost.log" "objectid=HOST.3" "hostname=snow"
"wwnlist=12.34.56.78.90.AB.CD.EF,01.23.45.67.89.AB.CD.EF" "ipaddress=172.18.32.9"
```

Command execution result:

```
RESPONSE
An instance of Host
  objectID=HOST.3
  name=snow
  ipAddress=172.18.32.9
  capacityInKB=0
  hostType=-1
  List of 2 WWN elements:
    An instance of WWN
      WWN=01.23.45.67.89.AB.CD.EF
    An instance of WWN
      WWN=12.34.56.78.90.AB.CD.EF
```

## 4-6-9 ModifyHostInfo

`ModifyHostInfo` modifies a `HostInfo` record in the Device Manager server (see Table 4-69).

Users with access to this command:

- Yes: System Administrator, Storage Administrator, Local System Administrator, Local Storage Administrator
- No: Guest, Local Guest

- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: A Local System Administrator and Local Storage Administrator can specify `HostInfo` for a permitted host.

Table 4-69 ModifyHostInfo Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `objectid` | Required | Object ID of the HostInfo record to be modified. |
| `serialnum` | Optional | New serial number of the path's storage array. Omit this when no change is required. |
| `model` | Optional | New model of the path's storage array. Omit this when no change is required. |
| `hostname` | Optional | New name of the host. Omit this when no change is required. |
| `ipaddress` | Optional | New IP address of the host. Omit this when no change is required. |
| `mountpoint` | Optional | New mount point on the host file system corresponding to the path. Omit this when no change is required. |
| `port` | Optional | New port on the path. Omit this when no change is required. |
| `domain` | Optional | New domain ID of the path. Omit this when no change is required. |
| `devnum` | Optional | New device number of the path. Omit this when no change is required. |
| `portwwn` | Optional | New port WWN on the host bus adapter. Omit this when no change is required. |
| `filetype` | Optional | New type of the file System. Omit this when no change is required. |
| `filename` | Optional | New name of the file System. Omit this when no change is required. |
| `size` | Optional | New LUN size in MB. Omit this when no change is required. |
| `percentused` | Optional | New percentage of the LUN in use. Omit this when no change is required. |

Command execution example: In this example, the CLI command makes the following modifications to the host-based information (object ID: `HOSTINFO.MY_HOSTINFO_XP1024.0.15.1`).

- The newly connected storage subsystem is a storage subsystem (serial number: `10001`, model: `XP1024`).
- The host name is changed to `MY_HOSTINFO_XP1024`.
- The new IP address is `111.111.111.111`.
- `E:` is the new mount point of the host file system.
- The LUN that is used is identified as follows: port number: `7`, domain ID: `0`, device number: `2`.
- The new WWN for the HBA is `11.33.55.77.99.BB.DD.FF`.
- The new file system name is `oo`, and the new file system type is `NTFS1`.
- `156` MB is secured for the new LUN, and the new percentage of use is set to `50%` of the LUN size.

```
hdvmcli ModifyHostInfo -o "D:\logs\XP1024 ModifyHostInfo.log"
"objectid=HOSTINFO.MY_HOSTINFO_HDS9980V.0.15.1" "model=XP1024" "serialnum=10001"
"hostname=MY_HOSTINFO_XP1024" "ipAddress=111.111.111.111" "mountPoint=E:" "port=7"
"domain=0" "devnum=2" "portwwn=11.33.55.77.99.BB.DD.FF" "filetype=NTFS1" "filename=oo"
"size=156" "percentused=50"
```

Command execution result:

```
RESPONSE
An instance of HostInfo
  objectID=HOSTINFO.MY_HOSTINFO_XP1024.0.15.1
  name=MY_HOSTINFO_XP1024
  serialNumber=10001
  arrayType=HDS9980V
  ipAddress=111.111.111.111
  mountPoint=E:
  portID=7
  domainID=0
```

```
  scsiID=15
  lun=2
  devNum=2
  osScsiBus=0
  osScsiID=15
  osLun=1
  portWWN=11.33.55.77.99.BB.DD.FF
  fileSystemType=NTFS1
  fileSystemName=oo
  sizeInMB=156
  percentUsed=50
  lastUpdated=1039003476
```

# 4-7 Server Management Commands

The Server Management commands provide some management support for the Device Manager server.

## 4-7-1 AddURLLink

`AddURLLink` adds a URL associated with an application and links it with a Command View XP AE object (see Table 4-70). If the Command View XP AE object already has an `URLLink` associated with it, the existing reference is overwritten and no error is returned.

Table 4-70 AddURLLink Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `url` | Required | The complete URL is required to launch the application or web page. |
| `name` | Required | Name of the application. |
| `linkedid` | Required | The object ID to link to. Must be a valid, existing Command View XP AE `objectID`. |
| `description` | Optional | Description of `URLLink`. |

Command execution example:

```
hdvmcli AddURLLink -o "D:\logs\XP1024 AddURLLink.log" "url=192.168.99.AA" "name=AUTO"
"linkedid=HSDOMAIN.HDS9980V.10001.0.3" "description=ARRAY.HDS9980V.10001"
```

Command execution result:

```
RESPONSE
An instance of URLLink
  objectID=URLLINK.HSDOMAIN.HDS9980V.10001.0.3.1
  name=AUTO
  url=192.168.99.AA
  linkedID=HSDOMAIN.HDS9980V.10001.0.3
  description=ARRAY.HDS9980V.10001
```

## 4-7-2 DeleteAlerts

`DeleteAlerts` deletes one or more alerts from the Device Manager server (see Table 4-71). You can specify alerts to be deleted using either the alert number or the source.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest, Local System Administrator, Local Storage Administrator

Table 4-71 DeleteAlerts Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `alertnum` | Optional | The number identifying the alert to be deleted. You must specify either this parameter or the `source` parameter, but not both. |
| `source` | Optional | Identifies a source of alerts; all alerts from this source are deleted. You must specify either this parameter or the `alertnum` parameter, but not both. |

Command execution example 1:

```
hdvmcli DeleteAlerts -o "D:\logs\ALL DeleteAlerts.log" "alertnum=6"
```

Command execution result 1:

```
RESPONSE
(Command completed; no data returned)
```

Command execution example 2:

```
hdvmcli DeleteAlerts -o "D:\logs\ALL DeleteAlerts.log" "source=ARRAY.HDS9980V.0207"
```

Command execution result 2:

```
RESPONSE
(Command completed; no data returned)
```

## 4-7-3 DeleteURLLink

`DeleteURLLink` removes the association of an application or web page with an object in the Device Manager server (see Table 4-72).

Table 4-72 DeleteURLLink Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `objectid` | Optional | The objectID of the URLLink to be removed. You must specify either `objectid` or `linkedid`. |
| `linkedid` | Optional | The object ID of the linked object. All links to this object are removed. You must specify either `objectid` or `linkedid`. |

Command execution example 1:

```
hdvmcli DeleteURLLink -o "D:\logs\XP1024 DeleteURLLink.log"
"linkedid=HSDOMAIN.HDS9980V.10001.0.3"
```

Command execution result 1:

```
RESPONSE
(Command completed; empty list returned)
```

Command execution example 2:

```
hdvmcli DeleteURLLink -o "D:\logs\XP1024 DeleteURLLink.log"
"objectid=URLLINK.HSDOMAIN.HDS9980V.10001.0.3.1"
```

Command execution result 2:

```
RESPONSE
(Command completed; empty list returned)
```

## 4-7-4 GetAlerts

`GetAlerts` returns the alert messages previously generated by the Device Manager server (see Table 4-73). The returned alerts can be limited by specifying a time and/or a number of messages.

If you do not specify any conditions to restrict the number of alert messages you intend to obtain, the information about all the alerts will be returned.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Table 4-73 GetAlerts Command Parameters

| Parameter Name | Status | Description |
|---|---|---|

Table 4-73 GetAlerts Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| countfilter | Optional (returned alerts not limited by total count, if omitted) | Maximum number of messages to be returned. When you omit this parameter, the number of returned alerts is not limited. |
| timefilter | Optional | Request only messages newer than the date and time. Required format is YYYY/MM/DD HH:MM:SS. When you omit this parameter, the number of returned alerts is not limited. |

Command execution example:

```
hdvmcli GetAlerts -o D:\logs\GetAlerts.log "countfilter=2" "timefilter=2002/04/01
00:00:00"
```

Command execution result:

```
RESPONSE
An instance of Alerts

  Contains 2Alert instances:
    An instance of Alert
      number=2
      type=Server
      source=ARRAY.HDS9970V.35001
      severity=3
      component=DKU drive
      description=Serious error detected on DKU drive.
      actionToTake=Contact Customer Support.
      data=Component has stopped.
      timeOfAlert=2003/01/06 20:13:56
    An instance of Alert
      number=1
      type=Server
      source=ARRAY.HDS9970V.35001
      severity=4
      component=DKC processor
      description=Moderate error detected on DKC processor.
      actionToTake=Contact Customer Support.
      data=Component does not function fully.
      timeOfAlert=2003/01/06 20:13:51
```

## 4-7-5 GetDebugLevel

`GetDebugLevel` returns the current debug level setting of the Device Manager server. The debug level affects the amount of information written to the trace.log file. There are no parameters.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Command execution example:

```
hdvmcli GetDebugLevel -o "D:\logs\GetDebugLevel.log"
```

Command execution result:

```
RESPONSE
An instance of DebugLevel
  value=0 [Full Debugging trace]
  description=Debugging Trace
```

## 4-7-6 GetLogFile

`GetLogFile` returns the requested Device Manager server log file (see Table 4-74).

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Table 4-74 GetLogFile Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `filename` | Required | Name of the requested log file (`access.log`, `service.log`, `error.log`, or `trace.log`). |

Command execution example:

```
hdvmcli GetLogFile -o "D:\logs\GetLogFile.log" "filename=error.log"
```

Command execution result:

```
RESPONSE
An instance of File
  name=error.log
  -----  Contents of File Follow -----
         .
         . (Contents of File "error.log" is omitted here)
         .
------  End of File Contents - -----
```

## 4-7-7 GetServerInfo

`GetServerInfo` returns information about the Device Manager server including the server version, server URI, list of supported array families, and so on. There are no parameters.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Command execution example:

```
hdvmcli GetServerInfo -o "D:\logs\GetServerInfo.log"
```

Command execution result:

```
RESPONSE:
An instance of ServerInfo
  buildVersion= Build 0430-00 (Jun 26, 2005)
  serverURL=http://localhost:2001
  upTime=7 minutes 55 seconds
  upSince=Mon, 1 Jul 2005 06:07:01 GMT
  currentApiVersion=4.3
  List of 3 StorageArray elements:
    An instance of StorageArray
      arrayFamily=HDS9900
      displayArrayFamily=XP512/48
    An instance of StorageArray
      arrayFamily=HDS9900V
      displayArrayFamily=XP1024/128
    An instance of StorageArray
      arrayFamily=USP
      displayArrayFamily=XP12K/10K
```

## 4-7-8 GetURLLink

GetURLLink gets any or all URLLink objects in the Device Manager server (see Table 4-75).

Table 4-75 GetURLLink Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| objectid | Optional | The object ID of the URLLink object to be returned.<br>You can omit this parameter when using the linkedid parameter to return all URLLink objects; do not use the linkedid parameter with the objectid parameter. |
| linkedid | Optional | The object ID of the linked object. All links to this object are returned.<br>You can omit this parameter when using the objectid parameter to return all URLLink objects; do not use the linkedid parameter with the objectid parameter. |

Command execution example 1:

```
hdvmcli GetURLLink -o "D:\logs\XP1024 GetURLLink.log"
"objectid=URLLINK.HSDOMAIN.HDS9980V.10001.0.3.1"
```

Command execution result 1:

```
RESPONSE:
An instance of URLLink
  objectID=URLLINK.HSDOMAIN.HDS9980V.10001.0.3.1
  name=AUTO
  url=192.168.99.AA
  description=ARRAY.HDS9980V.10001
  linkedID=HSDOMAIN.HDS9980V.10001.0.3
```

Command execution example 2:

```
hdvmcli GetURLLink -o "D:\logs\XP1024 GetURLLink.log"
"linkedid=HSDOMAIN.HDS9980V.10001.0.3"
```

Command execution result 2:

```
RESPONSE:
An instance of URLLink
  objectID=URLLINK.HSDOMAIN.HDS9980V.10001.0.3.1
  name=AUTO
  url=192.168.99.AA
  description=ARRAY.HDS9980V.10001
  linkedID=HSDOMAIN.HDS9980V.10001.0.3
```

## 4-7-9 ModifyDebugLevel

ModifyDebugLevel sets the amount of debugging information generated by the Device Manager server (see Table 4-76). The debug level can range from 0 to 4 (0=Full Debugging trace, 1=Basic Information, 2=Warning, 3=Error, 4=Fatal).

Modifying the debug level affects the amount of information written to the trace.log file, subsequent to the change. The command does not affect the Device Manager server configuration files, so any debug level modifications via this command does not affect the debug level when the server is restarted.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest, Local System Administrator, Local Storage Administrator

Table 4-76 ModifyDebugLevel Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| level | Required | New debug level (number between 0 and 4: 0=Full Debugging trace, 1=Basic Information, 2=Warning, 3=Error, 4=Fatal). |

Command execution example:

```
hdvmcli ModifyDebugLevel -o "D:\logs\ModifyDebugLevel.log" "level=0"
```

Command execution result:

```
RESPONSE
```

```
An instance of DebugLevel
  value=0 [Full Debugging trace]
  description=Debugging Trace
```

# 4-8 Replication Commands

Replication commands provide management support for the Device Manager server.

## 4-8-1 AddConfigFileForReplication

`AddConfigFileForReplication` creates the Continuous Access XP configuration definition file for RAID Manager that is required to create copy pairs for Business Copy XP, Continuous Access XP, Continuous Access XP Extension, and Snapshot XP.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: Continuous Access XP Extension can be used for StorageWorks XP Disk Array. Snapshot XP can be used for StorageWorks XP12000/XP10000.

Table 4-77 AddConfigFileForReplication Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `groupname` | Required (Method 1) | Group name used in the RAID Manager. You cannot specify a name that begins with a hash mark (`#`) or hyphen (`-`). You can use 31 or fewer characters.<br>When using Method 1, specify a group name that is specified in the definition file. |
| `pvolhostid` | Required | Host ID for identifying the P-VOL.<br>When using Method 1, specify the host ID of the P-VOL in a group specified in the definition file. |
| `pvolinstancenum` | Required (Method 1 or 2) | Instance number of the Continuous Access XP instance for managing the P-VOL.<br>When using Method 1, specify the instance number of the P-VOL of a group specified in the definition file. |
| `pvolportnum` | Required (Method 3) | Port number of the Continuous Access XP instance for managing the P-VOL.<br>In Solaris™, specify an integer from `0` to `65535`.<br>In AIX®, Windows®, HP-UX, and Linux®, specify an integer from `1` to `65535`.<br>This parameter is invalid when the `pvolinstancenum` is specified. |
| `svolhostid` | Required | Host ID for identifying the S-VOL.<br>When using Method 1, specify the host ID of the S-VOL of a group specified in the definition file. |
| `svolinstancenum` | Required (Method 1 or 2) | Instance number of the Continuous Access XP instance for managing the S-VOL.<br>When using Method 1, specify the instance number of the S-VOL of a group specified in the definition file. |
| `svolportnum` | Required (Method 3) | Port number of the Continuous Access XP instance for managing the S-VOL.<br>In Solaris™, specify an integer from `0` to `65535`.<br>In AIX®, Windows®, HP-UX, and Linux®, specify an integer from `1` to `65535`.<br>This parameter is invalid when the `svolinstancenum` is specified. |
| `pvolarraytype` | Required | Model of the storage subsystem that includes the P-VOL. |

Table 4-77 AddConfigFileForReplication Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| pvolserialnum | Required | Serial number of the storage subsystem that includes the P-VOL. |
| pvoldevnum | Required | Device number of the P-VOL. |
| pvolportid | Optional | Port number in the Continuous Access XP configuration file that manages the P-VOL path. |
| svolarraytype | Required | Model of the storage subsystem that includes the S-VOL. |
| svolserialnum | Required | Serial number of the storage subsystem that includes the S-VOL. |
| svoldevnum | Required | Device number of the S-VOL. |
| svolportid | Optional | Port number in the Continuous Access XP configuration file that manages the S-VOL path. |
| replicationfunction | Optional | Type of copy used for the copy pair.<br>BusinessCopy: Execute Business Copy XP.<br>ContinuousAccess: Execute Continuous Access XP.<br>ContinuousAccessExtension: Execute Continuous Access XP Extension.<br>Snapshot: Execute Snapshot XP.<br>The default of this parameter differs depending on the condition as shown below.<br>• When the P-VOL and S-VOL exist in the same storage subsystem: BusinessCopy<br>• When the P-VOL and S-VOL exist in different storage subsystems: ContinuousAccessExtension |

NOTE: To operate a specific copy pair in a copy group, you must specify all of the pvolserialnum, pvoldevnum, svolserialnum (or svolsequencenum), and svoldevnum parameters. If you omit all of these parameters, all the copy pairs in the copy group will be changed.

You can use this function in one of three ways.

The first method is adding a copy pair definition to an existing copy group that is specified in the RAID Manager configuration definition file, by using the following command:

```
hdvmcli [URL] AddConfigFileForReplication [option] groupname=copy-group-name
pvolhostid=host-ID pvolinstancenum=instance-number svolhostid=host-ID
svolinstancenum=instance-number pvolarraytype=model pvolserialnum=serial-number
pvoldevnum=device-number [pvolportid=port-number] svolarraytype=model
svolserialnum=serial-number svoldevnum=device-number [svolportid=port-number]
[replicationfunction={BusinessCopy|ContinuousAccess|ContinuousAccessExtension|Sna
pshot}]
```

Command execution example 1: (add pairs to the existing group in the configuration files).

```
hdvmcli AddConfigFileForReplication -o "D:\logs\XP12000 AddConfigFileForReplication.log"
"groupname=group1" "pvolhostid=1" "pvolinstancenum=11" "svolhostid=1"
"svolinstancenum=12" "pvolarraytype=USP" "pvolserialnum=65010001" "pvoldevnum=5"
"svolarraytype=USP" "svolserialnum=65010012" "svoldevnum=10"
"replicationfunction=ContinuousAccess
```

Command execution result 1:

```
RESPONSE
(Command completed; no data returned)
```

The second method is adding a copy group to the RAID Manager configuration definition file and adding a copy pair definition to the copy group, by using the following command:

```
hdvmcli [URL] AddConfigFileForReplication [option] [groupname=copy-group-name]
pvolhostid=host-ID pvolinstancenum=instance-number [pvolportnum=port-number]
svolhostid=host-ID svolinstancenum=instance-number [svolportnum=port-number]
```

```
pvolarraytype=model pvolserialnum=serial-number pvoldevnum=device-number
[pvolportid=port-number] svolarraytype=model svolserialnum=serial-number
svoldevnum=device-number [svolportid=port-number] [replicationfunction=
{BusinessCopy|ContinuousAccess|ContinuousAccessExtension|Snapshot}]
```

Command execution example 2: (create a group in the configuration files, and then add pairs to the group).

```
hdvmcli AddConfigFileForReplication -o "D:\logs\XP1024 AddConfigFileForReplication.log"
"pvolhostid=1" "pvolinstancenum=11" "svolhostid=1" "svolinstancenum=12"
pvolarraytype=HDS9980V" "pvolserialnum=15001" "pvoldevnum=11" "svolarraytype=HDS9980V"
"svolserialnum=15001" "svoldevnum=12"
```

Command execution result 2:

```
RESPONSE
(Command completed; no data returned)
```

The third method is creating a new CCI configuration definition file by using the following command:

```
hdvmcli [URL] AddConfigFileForReplication [option] [groupname=copy-group-name]
pvolhostid=host-ID [pvolinstancenum=instance-number] pvolportnum=port-number
svolhostid=host-ID [svolinstancenum=instance-number] svolportnum=port-number
pvolarraytype=model pvolserialnum=serial-number pvoldevnum=device-number
[pvolportid=port-number] svolarraytype=model svolserialnum=serial-number
svoldevnum=device-number [svolportid=port-number] [replicationfunction=
{BusinessCopy|ContinuousAccess|ContinuousAccessExtension|Snapshot}]
```

Command execution example 3: (create configuration files and a group, and then add pairs to the group).

```
hdvmcli AddConfigFileForReplication -o "D:\logs\XP1024 AddConfigFileForReplication.log"
"pvolhostid=5" "pvolinstancenum=15" "pvolportnum=50001" "svolhostid=4"
"svolinstancenum=15" "svolportnum=50002" "pvolarraytype=HDS9980V" "pvolserialnum=15001"
"pvoldevnum=11" "svolarraytype=HDS9970V" "svolserialnum=35001" "svoldevnum=128"
"replicationfunction=ContinuousAccess"
```

Command execution result 3:

```
RESPONSE
(Command completed; no data returned)
```

## 4-8-2 AddReplication

`AddReplication` creates copy pairs for Business Copy XP, Continuous Access XP, Continuous Access XP Extension, and Snapshot XP. When you create a copy pair, the Continuous Access XP configuration definition file for RAID Manager contained in the host is rewritten.

Continuous Access XP Extension can be used in the StorageWorks XP Disk Array.

Snapshot XP can be used for StorageWorks XP12000/XP10000. Before using Snapshot XP, create a V-VOL and then refresh the storage subsystem information by using the refresh functionality. When creating a copy pair, specify `AddReplication`.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Obtain the parameter values from the execution result of the `GetHost` command. Specify the values provided as the execution result in the appropriate parameters. Table 4-79 lists the items that are displayed by the `GetHost` command and their correspondence to the parameters of the `AddReplication` command.

Table 4-78 AddReplication Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `replicationgroupid` | Required (Method 1) | If you are using method 1, specify the copy group number.<br>NOTE: If you are using method 2 or 3, do not specify this parameter. If you specify this parameter, method 1 is applied. |

Table 4-78 AddReplication Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| groupname | Optional | Specify the group name used in the RAID Manager. The maximum number of characters you can use to specify a group name is 31. The group name cannot begin with a number sign (#) or a hyphen (-).<br>NOTE: If the replicationgroupid parameter is specified, this parameter is ignored. |
| pvolhostid | Required (Method 2 or 3) | If you are using method 2 or 3, specify the ID of the host that recognizes the primary volume (P-VOL).<br>NOTE: If the replicationgroupid parameter is specified, this parameter is ignored. |
| pvolinstancenum | Required (Method 2) | Specify the number of the Continuous Access XP instance that manages P-VOL.<br>NOTE: If the replicationgroupid parameter is specified, this parameter is ignored. |
| pvolportnum | Required (Method 3) | If you are using method 3, specify the port number of the Continuous Access XP instance that manages P-VOL.<br>In Solaris™, specify an integer from 0 to 65535.<br>In AIX®, Windows®, HP-UX, and Linux®, specify an integer from 1 to 65535.<br>NOTE: If the replicationgroupid or pvolinstancenum parameter is specified, this parameter is ignored. |
| svolhostid | Required (Method 2 or 3) | If you are using method 2 or 3, specify the ID of the host that recognizes the secondary volume (S-VOL).<br>NOTE: If the replicationgroupid parameter is specified, this parameter is ignored. |
| svolinstancenum | Required (Method 2) | Specify the number of the Continuous Access XP instance that manages S-VOL.<br>NOTE: If the replicationgroupid parameter is specified, this parameter is ignored. |
| svolportnum | Required (Method 3) | If you are using method 3, specify the port number of the Continuous Access XP instance that manages S-VOL.<br>In Solaris™, specify an integer from 0 to 65535.<br>In AIX®, Windows®, HP-UX, and Linux®, specify an integer from 1 to 65535<br>NOTE: If the replicationgroupid or svolinstancenum parameter is specified, this parameter is ignored. |
| pvolarraytype | Required | Specify the model of the storage subsystem that contains P-VOL. |
| pvolserialnum | Required | Specify the serial number of the storage subsystem that contains P-VOL. |
| pvoldevnum | Required | Specify the device number of P-VOL. |
| pvolportid | Optional | Specify the port ID in the Continuous Access XP configuration file that manages P-VOL paths. |
| svolarraytype | Required | Specify the model of the storage subsystem that contains S-VOL. |
| svolserialnum | Required | Specify the serial number of the storage subsystem that contains S-VOL. |
| svoldevnum | Required | Specify the device number of S-VOL. |
| svolportid | Optional | Specify the port ID in the Continuous Access XP configuration file that manages S-VOL paths. |

Table 4-78 AddReplication Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `replicationfunction` | Optional | Specify the type of operation that is to be executed with the copy pair:<br>`BusinessCopy`: Execute Business Copy XP.<br>`ContinuousAccess`: Execute Continuous Access XP.<br>`ContinuousAccessExtension`: Execute Continuous Access XP Extension.<br>`Snapshot`: Execute Snapshot XP.<br>The default value is as follows:<br>• When P-VOL and S-VOL are located in the same storage subsystem: `BusinessCopy`<br>• When P-VOL and S-VOL are located in different storage subsystems: `ContinuousAccessExtension` |
| `fencelevel` | Optional | Specify the P-VOL fence level as follows (default = `Never`).<br>The fence level is ignored for Business Copy XP, Continuous Access XP Extension, and Snapshot XP.<br>`Never`: If you specify `Never`, a host write request to P-VOL will not be rejected even though the MCU was able to change the status of a S-VOL pair into the suspend status.<br>`Data`: If you specify `Data`, a host write request to P-VOL will be rejected when an update copy fails.<br>`Status`: If you specify `Status` (StorageWorks XP Disk Array), a host write request to P-VOL will be rejected only when the MCU cannot change the status of a S-VOL pair to the suspend status. |
| `copytracksize` | Optional | Specify a copy pace (number of tracks copied at one time during initial copy), as an integer between `1` and `15`.<br>The default value is `3` for the StorageWorks XP Disk Array.<br>This parameter cannot be specified when Snapshot XP is being used. |

Table 4-79 GetHost Command Display and AddReplication Command Parameters

| Location of Value Displayed by the GetHost Command | Item Name | Corresponding Parameter |
|---|---|---|
| ReplicationGroup | replicationGroupID | `replicationgroupid` |
| | pvolHostID | `pvolhostid` |
| | pvolInstanceNumber | `pvolinstancenum` |
| | pvolPortNumber | `pvolportnum` |
| | svolHostID | `svolhostid` |
| | svolInstanceNumber | `svolinstancenum` |
| | svolPortNumber | `svolportnum` |
| ReplicationInfo | pvolSerialNumber | `pvolserialnum` |
| | pvolArrayType | `pvolarraytype` |
| | pvolDevNum | `pvoldevnum` |
| | svolArrayType | `svolarraytype` |
| | svolSerialNumber | `svolserialnum` |
| | svolDevNum | `svoldevnum` |
| | copyTrackSize | copytracksize |

You can create a copy pair in one of three ways.

The first method is adding a copy pair to an existing copy group that is specified in the RAID Manager configuration definition file, by using the following command:

```
hdvmcli [URL] AddReplication [option] replicationgroupid=copy-group-number
pvolarraytype=model pvolserialnum=serial-number pvoldevnum=device-number
[pvolportid=port-number] svolarraytype=model svolserialnum=serial-number
svoldevnum=device-number [svolportid=port-number]
[replicationfunction={BusinessCopy|ContinuousAccess|ContinuousAccessExtension|Sna
pshot}] [fencelevel=fence-level] [copytracksize=copy-pace]
```

Command execution example 1: This example creates a copy pair for Continuous Access XP in an existing copy group.

Create a copy pair in the copy group with copy group number `0`. As the primary volume (P-VOL), specify the logical device with LDEV number `5` in the storage subsystem with model number `XP1024` and serial number `65010001`. As the secondary volume (S-VOL), specify the logical device with LDEV number `10` in the storage subsystem with model number `XP1024` and serial number `65010012`.

```
hdvmcli AddReplication -o "D:\logs\XP1024 AddReplication.log" "replicationgroupid=0"
"pvolarraytype=HDS9980V" "pvolserialnum=65010001" "pvoldevnum=5" "svolarraytype=HDS9980V"
"svolserialnum=65010012" "svoldevnum=10" "replicationfunction=ContinuousAccess"
"fencelevel=Data"
```

Command execution result 1:

```
RESPONSE:
An instance of ReplicationGroup
  objectID=REPGROUP.0
  replicationGroupID=0
  groupName=HCMD_CG0003
  pvolHostID=1
  pvolInstanceNumber=11
  pvolPortNumber=50,001
  svolHostID=1
  svolInstanceNumber=12
  svolPortNumber=50,002
  replicationFunction=ContinuousAccess
  fenceLevel=Data
  copyTrackSize=15
  List of 1 ReplicationInfo elements:
  An instance of ReplicationInfo
    objectID=REPINFO.65010001.5.0012.10
    pairName=HCMD_CP0004
    pvolSerialNumber=6501001
    pvolArrayType=HDS9980V
    pvolDevNum=5
    pvolObjectID=LU.HDS9980V.65010001.5
    pvolPoolID=-1
    svolSerialNumber=65010012
    svolArrayType=HDS9980V
    svolDevNum=10
    svolObjectID=LU.HDS9980V.65010012.10
    svolPoolID=-1
    fenceLevel=Data
    replicationFunction=ContinuousAccess
    status=1
    muNumber=-1
    copyTrackSize=15
    splitTime=-1
```

The second method is to create a copy group in the RAID Manager configuration definition file, and adds a copy pair to the copy group, by using the following command:

```
hdvmcli [URL] AddReplication [option] [groupname=group-name] pvolhostid=host-ID
pvolinstancenum=instance-number [pvolportnum=port-number] svolhostid=host-ID
svolinstancenum=instance-number [svolportnum=port-number] pvolarraytype=model
pvolserialnum=serial-number pvoldevnum=device-number [pvolportid=port-number]
svolarraytype=model svolserialnum=serial-number svoldevnum=device-number
[svolportid=port-number] [replicationfunction=
```

{BusinessCopy|ContinuousAccess|ContinuousAccessExtension|Snapshot}]
[fencelevel=*fence-level*] [copytracksize=*copy-pace*]

Command execution example 2: This example creates a copy group in the existing RAID Manager configuration definition file and creates a copy pair for Business Copy XP. For the primary volume (P-VOL), specify the logical device (LDEV 11, model number XP1024, and serial number 15001). The host that recognizes the primary volume has ID 1, and the Continuous Access XP instance number is 11. For the secondary volume (S-VOL), specify the logical device (LDEV 12, model number XP1024 and serial number 15001). The ID of the host that recognizes the secondary volume is 1, (same as the primary volume), and the Continuous Access XP instance number is 12.

```
hdvmcli AddReplication -o "D:\logs\XP1024 AddReplication.log" "pvolhostid=1"
"pvolinstancenum=11" "svolhostid=1" "svolinstancenum=12" pvolarraytype=HDS9980V"
"pvolserialnum=15001" "pvoldevnum=11" "svolarraytype=HDS9980V" "svolserialnum=15001"
"svoldevnum=12"
```

Command execution result 2: The following shows the execution result of the above command:

```
RESPONSE:
An instance of ReplicationGroup
  objectID=REPGROUP.1
  replicationGroupID=1
  groupName=HCMD_CG0001
  pvolHostID=1
  pvolInstanceNumber=11
  pvolPortNumber=50,001
  svolHostID=1  svolInstanceNumber=12
  svolPortNumber=50,002
  replicationFunction=BusinessCopy
  copyTrackSize=15
  List of 1 ReplicationInfo elements:
  An instance of ReplicationInfo
    objectID=REPINFO.15001.11.15001.12
    pairName=HCMD_CP0000
    pvolSerialNumber=15001
    pvolArrayType=HDS9980V
    pvolDevNum=11
    pvolObjectID=LU.HDS9980V.15001.11
    pvolPoolID=-1
    svolSerialNumber=15001
    svolArrayType=HDS9980V
    svolDevNum=12
    svolObjectID=LU.HDS9980V.15001.12
    svolPoolID=-1
    replicationFunction=BusinessCopy
    status=1
    muNumber=2
    copyTrackSize=15
    splitTime=-1
```

The third method is to create a new RAID Manager configuration definition file, create a copy group, then add a copy pair to the copy group, using the following command:

hdvmcli [*URL*] AddReplication [*option*] [groupname=*group-name*] pvolhostid=*host-ID*
[pvolinstancenum=*instance-number*] pvolportnum=*port-number* svolhostid=*host-ID*
[svolinstancenum=*instance-number*] svolportnum=*port-number* pvolarraytype=*model*
pvolserialnum=*serial-number* pvoldevnum=*device-number* [pvolportid=*port-number*]
svolarraytype=*model* svolserialnum=*serial-number* svoldevnum=*device-number*
[svolportid=*port-number*] [replicationfunction=
{BusinessCopy|ContinuousAccess|ContinuousAccessExtension|Snapshot}]
[fencelevel=*fence-level*] [copytracksize=*copy-pace*]

Command execution example 3: This example creates a RAID Manager configuration definition file and a copy group and then creates a copy pair for Continuous Access XP in the copy group.

For the primary volume (P-VOL), specify LDEV 11, model number XP1024 and serial number 15001. The ID of the host that recognizes the primary volume is 5, the Continuous Access XP instance number is 15, and the port number is 50001. For the secondary volume (S-VOL), specify LDEV 128, model number XP1024, and

serial number 35001. The host ID is 4, the Continuous Access XP instance number is 15, the port number is 50002, and the copy pace is 14.

```
hdvmcli AddReplication -o "D:\logs\XP1024 AddReplication.log" "pvolhostid=5"
"pvolinstancenum=15" "pvolportnum=50001" "svolhostid=4" "svolinstancenum=15"
"svolportnum=50002" "pvolarraytype=HDS9980V" "pvolserialnum=15001" "pvoldevnum=11"
"svolarraytype=HDS9970V" "svolserialnum=35001" "svoldevnum=128"
"replicationfunction=ContinuousAccess" "copytracksize=14"
```

Command execution result 3:

```
RESPONSE:
An instance of ReplicationGroup
  objectID=REPGROUP.2
  replicationGroupID=2
  groupName=HCMD_CG0002
  pvolHostID=5
  pvolInstanceNumber=15
  pvolPortNumber=50,001
  svolHostID=4
  svolInstanceNumber=15
  svolPortNumber=50.002
  replicationFunction=ContinuousAccess
  fenceLevel=Never  copyTrackSize=14
  List of 1 ReplicationInfo elements:
  An instance of ReplicationInfo
    objectID=REPINFO.15001.11.35001.128
    pairName=HCMD_CP0000
    pvolSerialNumber=15001
    pvolArrayType=HDS9980V
    pvolDevNum=11
    pvolObjectID=LU.HDS9980V.15001.11
    pvolPoolID=-1
    svolSerialNumber=35001
    svolArrayType=HDS9970V
    svolDevNum=128
    svolObjectID=LU.HDS9970V.35001.128
    svolPoolID=-1
    fenceLevel=Never
    replicationFunction=ContinuousAccess
    status=1
    muNumber=-1
    copyTrackSize=14
    splitTime=-1
```

## 4-8-3 DeleteReplication

DeleteReplication deletes copy pair information from a RAID Manager configuration definition file and releases the copy pair from the storage subsystem.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

NOTE: To delete a specific copy pair from a copy group, you must specify pvolserialnum, pvoldevnum, svolserialnum (or svolsequencenum), and svoldevnum. If you omit all of these parameters, the system deletes all copy pairs in the specified copy group.

Table 4-80 DeleteReplication Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| replicationgroupid | Required | Specify the copy group number. |

Table 4-80 DeleteReplication Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| pvolserialnum | Optional | Specify the serial number of the storage subsystem that contains the primary volume (P-VOL). |
| pvoldevnum | Optional | Specify the device number of P-VOL. |
| svolserialnum | Optional | Specify the serial number of the storage subsystem that contains the S-VOL. |
| svolsequencenum | Optional | Specify the sequence number of the storage subsystem that contains the S-VOL. |
| svoldevnum | Optional | Specify the device number of S-VOL. |

Command execution example 1: This example deletes a copy pair for Continuous Access XP that has been defined in copy group 8. The primary volume (P-VOL) is the LDEV number 10, serial number 65010001. The secondary volume (S-VOL) is LDEV number 11, sequence number 0012. The execution result displays the remaining copy pairs after deleting the specified copy pair.

```
hdvmcli DeleteReplication -o "D:\logs\XP1024 DeleteReplication.log"
"replicationgroupid=8" "pvolserialnum=65010001" "pvoldevnum=10" "svolsequencenum=0012"
"svoldevnum=11"
```

Command execution result 1:

```
RESPONSE:
An instance of ReplicationGroup
  objectID=REPGROUP.7
  replicationGroupID=7
  groupName=HCMD_CG0007
  pvolHostID=1
  pvolInstanceNumber=11
  pvolPortNumber=50,001
  svolHostID=2
  svolInstanceNumber=12
  svolPortNumber=50,002
  replicationFunction=ContinuousAccess
  fenceLevel=Never
  copyTrackSize=15
  List of 1 ReplicationInfo elements:
  An instance of ReplicationInfo
    objectID=REPINFO.65010001.12.0012.25
    pairName=HCMD_CP0004
    pvolSerialNumber=65010001
    pvolArrayType=HDS9980V
    pvolDevNum=12
    pvolObjectID=LU.HDS9980V.65010001.12
    pvolPoolID=-1
    svolSerialNumber=65010012
    svolArrayType=HDS9980V
    svolDevNum=25
    svolObjectID=LU.HDS9980V.65010012.25
    svolPoolID=-1
    fenceLevel=Never
    replicationFunction=ContinuousAccess
    status=8
    muNumber=-1
    copyTrackSize=15
    splitTime=-1
```

Command execution example 2: This example deletes copy group 7 and all copy pairs defined in this copy group.

```
hdvmcli DeleteReplication -o "D:\logs\XP1024 DeleteReplication.log"
"replicationgroupid=7"
```

Command execution result 2:

```
RESPONSE
(Command completed; no data returned)
```

## 4-8-4 GetReplicationControllerPair

`GetReplicationControllerPair` obtains information about a replication controller pair.

In the StorageWorks XP Disk Array, the pairs indicate paths between MCUs and RCUs.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Table 4-81 GetReplicationControllerPair Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `masterserialnum` | Optional | Specify the serial number of the storage subsystem that contains the main control unit (MCU). |
| `mastercontrollerid` | Optional | Specify the CU number of the MCU. |
| `remoteserialnum` | Optional | Specify the serial number of the storage subsystem that contains the remote control unit (RCU). |
| `remotessid` | Optional | Specify the SSID of the RCU. |

Command execution example 1: This example obtains controller pair information for the MCU with CU number `10` in the storage subsystem with serial number `35001` and for the RCU with SSID 65534 in the storage subsystem with serial number `15001`.

```
hdvmcli GetReplicationControllerPair -o "D:\logs\XP128 GetReplicationControllerPair.log"
"masterserialnum=35001" "mastercontrollerid=10" "remoteserialnum=15001"
"remotessid=65534"
```

Command execution result 1:

```
RESPONSE
An instance of ReplicationControllerPair
  objectID=REPCTLPAIR.35001.10.15001.65534
  masterArrayType=HDS9970V
  masterSerialNumber=35001
  masterControllerID=10
  masterStartDevNum=0
  masterEndDevNum=255
  remoteArrayType=HDS9980V
  remoteSerialNumber=15001
  remoteSSID=65534
  remoteControllerID=15
  remoteStartDevNum=0
  remoteEndDevNum=255
```

Command execution example 2: This example obtains the controller pair information in all storage subsystems that have been registered in the Device Manager database.

```
hdvmcli GetReplicationControllerPair -o "D:\logs\XP128 GetReplicationControllerPair.log"
```

Command execution result 2:

```
RESPONSE
An instance of ReplicationControllerPair
  objectID=REPCTLPAIR.35001.10.15001.65534
  masterArrayType=HDS9970V
  masterSerialNumber=35001
  masterControllerID=10
  masterStartDevNum=0
  masterEndDevNum=255
```

```
  remoteArrayType=HDS9980V
  remoteSerialNumber=15001
  remoteSSID=65534
  remoteControllerID=15
  remoteStartDevNum=0
  remoteEndDevNum=255
```

## 4-8-5 ModifyReplication

`ModifyReplication` changes a copy pair status to `split`, `resync`, or `restore`:

- `split`: Copying between copy pair has stopped.
- `resync`: Synchronization is achieved from P-VOL to S-VOL so that their contents match.
- `restore`: Synchronization is achieved from S-VOL to P-VOL so that their contents match.

Users with access to this command:

- Yes: System Administrator, Storage Administrator
- No: Guest, Local Guest
- Restricted to permitted resources: Local System Administrator and Local Storage Administrator do not have access range limitations.

Table 4-82 ModifyReplication Command Parameters

| Parameter Name | Status | Description |
|---|---|---|
| `replicationgroupid` | Required | Specify the copy group number. |
| `operation` | Required | Specify one of the following values:<br>`split`: Split the copy pair.<br>`resync`: Re-synchronize the copy pair from the primary volume (P-VOL) to the secondary volume (S-VOL).<br>`restore`: Re-synchronize the copy pair from S-VOL to P-VOL. |
| `pvolserialnum` | Optional | Specify the serial number of the storage subsystem that contains the P-VOL. |
| `pvoldevnum` | Optional | Specify the device number of P-VOL. |
| `svolserialnum` | Optional | Specify the serial number of the storage subsystem that contains the S-VOL. |
| `svolsequencenum` | Optional | Specify the sequence number of the storage subsystem that contains the S-VOL. |
| `svoldevnum` | Optional | Specify the device number of S-VOL. |
| `copytracksize` | Optional | Specify the copy pace (from `1` to `15`). When the status of the Snapshot XP pair is `split` or `resync`, the specification for this parameter is ignored. When changing the copy pace for an identified copy pair, specify the parameters `pvolserialnum`, `pvoldevnum`, `svolserialnum`, and `svoldevnum`. When using one operation to change the copy paces of all copy pairs, omit these parameters. |

NOTE: To manipulate a specific copy pair in a copy group, the `pvolserialnum`, `pvoldevnum`, `svolserialnum` (or `svolsequencenum`), and `svoldevnum` parameters must all be specified. If you omit all of these parameters, the system deletes all copy pairs in the specified copy group.

Command execution example: This example changes to the suspend status (split) the status of the copy pair for Business Copy XP that is defined in the copy group with copy group number `12`. The primary value of the copy pair (P-VOL) is the logical device with LDEV number `20` in the storage subsystem with serial number `65010001`. The secondary volume is the logical device with LDEV number `21` in the storage subsystem with serial number `65010001`.

```
hdvmcli ModifyReplication -o "D:\logs\XP1024 ModifyReplication.log"
"replicationgroupid=12" "operation=split" "pvolserialnum=65010001" "pvoldevnum=20"
"svolserialnum=65010001" "svoldevnum=21"
```

Command execution result:

```
RESPONSE:
An instance of ReplicationGroup
  objectID=REPGROUP.12
  replicationGroupID=12
```

```
groupName=HCMD_CG000d
pvolHostID=1
pvolInstanceNumber=11
pvolPortNumber=50,000
svolHostID=3
svolInstanceNumber=12
svolPortNumber=50,001
replicationFunction=BusinessCopy
copyTrackSize=15
List of 1 ReplicationInfo elements:
An instance of ReplicationInfo
  objectID=REPINFO.65010001.20.65010001.21
  pvolSerialNumber=65010001
  pairName=HCMD_CP0001
  pvolArrayType=HDS9980V
  pvolDevNum=20
  pvolObjectID=LU.HDS9980V.65010001.20
  pvolPoolID=-1
  svolSerialNumber=65010001
  svolArrayType=HDS9980V
  svolDevNum=21
  svolObjectID=LU.HDS9980V.65010001.21
  svolPoolID=-1
  replicationFunction=BusinessCopy
  status=16
  muNumber=0
  copyTrackSize=15
  splitTime=-1
```

# 5 Using the Device Manager Properties File

This chapter describes how to use property files to specify option parameters. This chapter also describes how to change certain properties by entering commands on the command line.

- Using the Properties File to Specify Options (section 5-1)
- Using the Property Files to Specify Parameters (section 5-2)
- Setting Up the Device Manager CLI Execution Environment (section 5-3)

## 5-1 Using the Properties File to Specify Options

The Device Manager CLI properties file is the file `hdvmcli.properties` in a directory or folder where Device Manager CLI is installed.

In this properties file, you can specify arguments, options, and parameters to be entered at CLI execution. Specifying these arguments, options, and parameters in the properties file in advance allows you to omit them when you execute Device Manager CLI.

- To specify an option, use the long option name as the key (for example, `--messagetrace` instead of `-t`), and use the option value as the property value.
- To always output the command execution results, you can set the output option corresponding to the property as `output=redirect.out` instead of entering the following at the command prompt:

  ```
  C:\hdvm> hdvmcli http://localhost:2001/service GetStorageArray output
  redirect.out serialnum=30051 model=XP512
  ```

NOTE: You must always enter the `user` option and `password` option at the command prompt, or specify them in the properties file.

- Whenever an option is specified both from the command line and from the properties file, the value from the command line is used. To specify options that have no parameters from the properties file, set the option to `true`, for example, `messagetrace=true`.

Table 5-1 shows an example of the properties file (in Windows).

Table 5-1 Example of the Properties File (in Windows)

```
#################################
#
#       Device Manager Command Line Interface (CLI) Properties File
#
#   Can be used to provide options and default parameters for the
#   Device Manager CLI program.
#
#   The Device Manager CLI program does not require any of the properties to be set.

# Location for the diagnostics file (default, when not specified, is
# hdvmcli.log in the executing directory)
hdvmcli.logfile=C:/Temp/diag.log

# Diagnostic level of the diagnostic file (currently, default is
# DEBUG). Allowable values are DEBUG, INFO, and WARN, each of which
# will output that level and higher.
hdvmcli.diaglevel=INFO

# Location for the message trace file (default, when not specified, is
# MessageTrace.log in the executing directory)
hdvmcli.tracefile=C:/DeviceManager/traffic.log


# set the server url
hdvmcli.serverurl=http://localhost:2001/service

#####  OPTIONS ####

user=khalsa
```

```
# password can be provided directly, or from a password file
password=khalsa
#password=@D:\\DeviceManager\\.passwd

# provide a copy of the raw xml request & response in MessageTrace.log file
messagetrace=true


#####  COMMAND PARAMETERS ####

# set the Array model, for commands that use this parameter
model=XP1024
```

# 5-2 Using the Properties File to Specify Parameters

Specifying a parameter in the properties file in advance allows you to omit entering the parameter at the command prompt.

You can specify all the parameters you enter at the command prompt in the properties file. To specify a parameter, use the parameter name as the key and the parameter value as the property value. For example, when you always execute a command for a certain storage subsystem, you can set the property corresponding to the `model` parameter as `model=XP512` instead of entering the following at the command prompt:

```
C:\hdvm> hdvmcli http://localhost:2001/service GetStorageArray serialnum=30057
model=XP512
```

When a parameter is specified both from the command line and from the properties file, Device Manager uses the value from the command line.

NOTE: All the parameters specified in the properties file are assumed to have been specified when a command is executed. If you specify an inappropriate parameter, the command execution result may differ from what you expected. For this reason, make sure that you only specify parameters that do not cause problems to any other commands.

# 5-3 Setting Up the Device Manager CLI Execution Environment

This section describes how to set up the Device Manager CLI execution environment based on Table 5-1 Example of Properties File (in Windows).

## 5-3-1 Specifying the Log File

The default file name of the log file used by Device Manager CLI is `hdvmcli.log`. This file is created in Device Manager CLI execution directory or folder. You can specify a default file name, log output destination, log level, and so on. Specify the log output destination in the `hdvmcli.logfile` property in the properties file.

In the following example, the command specifies `C:\Temp\diag.log` for the output destination:

```
hdvmcli.logfile=C:/Temp/diag.log
```

NOTE: In a Windows® environment, use `/` or `\\` instead of `\` as a delimiter.

## 5-3-2 Specifying a Log Level

You can use `hdvmcli.diaglevel` to specify the level of log information to be output to the log file. Specify the log level as follows:

- Debugging: `hdvmcli.diaglevel=DEBUG`
- Information: `hdvmcli.diaglevel=INFO`
- Warnings: `hdvmcli.diaglevel=WARN`
- Errors: `hdvmcli.diaglevel=ERROR`

NOTE: You can set the `hdvmcli.diaglevel` property to `DEBUG`, `INFO`, `WARN`, or `ERROR`. The default logging level is `INFO`.

## 5-3-3 Message Trace Output

You can use the `-t` or `--messagetrace` option to record the `requests` sent to the Device Manager server and the responses received back from the Device Manager server. By default, the messages are recorded in the `MessageTrace.log` file. You can also turn on message trace and specify the location of the log file in the properties file.

For example, you could specify the log file location and turn on message trace in the property file as follows:

```
hdvmcli.tracefile=C:/DeviceManager/traffic.log
messagetrace=true
```

For more information on Device Manager properties, please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Server Installation and Configuration Guide*.

## 5-3-4 Specifying the Device Manager Server URL

Because the same Device Manager server may be used repeatedly, the URL can be specified in the properties file. The `hdvmcli.serverurl` property can specify the following URL:

```
hdvmcli.serverurl=http://localhost:2001/service
```

When the URL is defined in the properties file, it can be omitted from the command line. For example:

```
C:\hdvm > hdvmcli GetStorageArray serialnum=30057 model=XP512
```

When the URL is also specified in the command line, that URL is used instead of the URL from the properties file.

## 5-3-5 Inputting Requests from XML Documents

△ CAUTION: To use the XML-API CLI feature, you should have thorough knowledge of XML-API, and should take great care in formulating commands.

Instead of specifying the command and parameters from the command line, you can make the request from a file. The file must contain a valid XML document in the correct form for a Device Manager request. The command line option `-i` or `--input` specifies the input file. The other application options are still valid. However, any command or parameter specified from the command line or in the properties file is ignored, because that information is already in the XML document.

The -i <filename> option allows you to specify an xml message file. You can use this feature to request multiple operations in on the CLI command, which can save considerable time.

For example, usually the AddLun command specifies creation of a single LUN. The AddLun XML-API allows you to create multiple LUNs with a single request.

Syntax:

```
  hdvmcli [-t] AddLun
     serialnum=<Serial Number> model=<Model Name of Array>
     port=<Port #> domain=<HostStorageDomain#>
     scsi=<Scsi Target #> lun=<SCSI LU #> devnum=<LDEV #>
```

Example 1:

To add a LUN to LDEV 0:01 on XP1024 (Serial:15045), where Port 1-A, HostStorageDomain 0, LU 100 is assigned to that LUN, do the following:

```
hdvmcli -t addLUN
serialnum=15045 model=XP1024
 port=0 domain=0 scsi=15 lun=100 devnum=1
Following XML-API request will be generated according to specified parameters to hdvmcli;
<?xml version="1.0" encoding="UTF-8"?>
<HiCommandServerMessage>
  <APIInfo version="4.3" />
  <Request>
    <StorageManager>
      <Add target="LUN">
        <StorageArray objectID="ARRAY.HDS9980V.15045">
          <Path portID="0" domainID="0" scsiID="15" lun="100" devNum="1" />
        </StorageArray>
```

```
      </Add>
    </StorageManager>
  </Request>
</HiCommandServerMessage>
```

Example 2:

Save the following to a file:

```
<?xml version="1.0" encoding="UTF-8"?>
<HiCommandServerMessage>
  <APIInfo version="4.3" />
  <Request>
    <StorageManager>
      <Add target="LUN">
        <StorageArray objectID="ARRAY.HDS9980V.15045">
          <Path portID="0" domainID="0" scsiID="15" lun="102" devNum="102" />
          <Path portID="0" domainID="0" scsiID="15" lun="104" devNum="104" />
        </StorageArray>
      </Add>
    </StorageManager>
  </Request>
</HiCommandServerMessage>
```

When you specify the saved file that contains the preceding message, you can create multiple LUNs using one command, as follows:

```
hdvmcli -t -i xmlcommand.txt
```

## 5-3-6 Using the Message Trace File to Create XML Files

When message tracing is turned on, each execution of the application writes over the message tracing file with the request and response of that execution, so that file never has more than one request and one response.

The request and the response are identified by labels. Each label includes a timestamp. The request also includes the HTTP header values set by the application. The request is the same string that is streamed over HTTP to the server. The response is the string read from the Device Manager server via HTTP, before any parsing. Therefore, even if the application cannot make sense of the response (or does not handle the response correctly) the message trace contains a record of the response.

The following example shows how to download Device Manager CLI from the Device Manager server to a personal computer and then use the message trace log file to create XML files.

1. Follow the instructions in section 1-5 to download a copy of Device Manager CLI from the Device Manager server to a PC.
2. On the PC, extract the downloaded files to `C:\hdvm`.
3. Change the directory to `hdvm`.

   ```
   cd hdvm
   ```

4. Edit the `hdvmcli.properties` file to turn on message trace. For example:

   ```
   C:\hdvm>type hdvmcli.properties
   hdvmcli.serverurl=http://193.36.40.55:2001/service
   user=system
   password=manager
   messagetrace=true
   ```

NOTE: You need “`messagetrace=true`” in order to view the XML in the message trace log file.

5. Copy `hdvmcli.CLI.bat do.bat`. This is so that rather than having to type `hdvmcli` followed by the command each time, you can just type “`do`” followed by the command.
6. At the CLI prompt, type the following command: do getserverinfo

   You will see output similar to the following:

   ```
   RESPONSE:
   An instance of ServerInfo
     buildVersion=Build 0430-00 (Jun 26, 2005)
     serverURL=http://193.36.40.55:2001
   ```

```
  upTime=1 day 23 hours 35 minutes 27 seconds
  upSince=Mon, 5 Sep 2005 11:07:51 GMT
  currentApiVersion=4.3
  List of 3 StorageArray elements:
    An instance of StorageArray
      arrayFamily=HDS9900
      displayArrayFamily=XP512/48
    An instance of StorageArray
      arrayFamily=HDS9900V
      displayArrayFamily=XP1024/128
    An instance of StorageArray
      arrayFamily=USP
      displayArrayFamily=XP12K/10K
C:\hdvm>
```

NOTE: The XML for this command is now in the `MessageTrace.log` file.

7. View the contents of the `MessageTrace.log` file. The output will look similar to the following:

```
C:\hdvm>more MessageTrace.log
>>> Request Submitted at: 12:46:07 CEST to: http://193.36.40.55:2001/service/Ser
verAdmin
   ----  HTTP Header  ----
   User-Agent = HiCommandClient
   Accept = */*
   Host = 193.36.40.55
   Content-Type = text/xml
   Connection = Keep-Alive
   Authorization = null
   Content-Length = 225
   ----------------------
<?xml version="1.0" encoding="UTF-8"?>
<HiCommandServerMessage>
  <APIInfo version="4.3" />
  <Request>
    <ServerAdmin>
      <Get target="ServerInfo" />
    </ServerAdmin>
  </Request>
</HiCommandServerMessage>
```

8. Copy and save the XML information (excluding the HTTP Header information) from the `MessageTrace.log` file and use a text editor to create a file called `getserv.inp`. For example:

```
C:\hdvm>type getserv.inp
<?xml version="1.0" encoding="UTF-8"?>
<HiCommandServerMessage>
  <APIInfo version="4.3" />
  <Request>
    <ServerAdmin>
      <Get target="ServerInfo" />
    </ServerAdmin>
  </Request>
</HiCommandServerMessage>
C:\hdvm>
```

9. At the CLI prompt, type the following command: `do -i getserv.inp`

   You will see results similar to the following example:

```
C:\hdvm>type getservinp
Das System kann die angegebene Datei nicht finden.
C:\hdvm>type getserv.inp
<?xml version="1.0" encoding="UTF-8"?>
<HiCommandServerMessage>
  <APIInfo version="4.3" />
  <Request>
```

```
    <ServerAdmin>
      <Get target="ServerInfo" />
    </ServerAdmin>
  </Request>
</HiCommandServerMessage>
C:\hdvm>
C:\hdvm>
C:\hdvm>do -i getserv.inp
RESPONSE:
<?xml version="1.0" encoding="UTF-8"?>
<HiCommandServerMessage>
  <APIInfo version="4.3" />
  <Response>
    <EchoCommand name="GetServerInfo" status="COMPLETED" result="0" resultSource
="ServerAdmin.GetServerInfo" messageID="253437470" />
    <ResultList>
      <ServerInfo buildVersion="Build 0430-00 (Jun 26, 2005)"
serverURL="http://193.36.40.55:2001" upTime="1 day 23 hours
52 minutes 4 seconds" upSince="Mon, 8 Sep 2003 11:07:51 GMT">

        <StorageArray arrayFamily="HDS9900" displayArrayFamily="XP512/48" />
        <StorageArray arrayFamily="HDS9900V" displayArrayFamily="XP1024/128" />
        <StorageArray arrayFamily="USP" displayArrayFamily="XP12K/10K" />

      </ServerInfo>
    </ResultList>
  </Response>
</HiCommandServerMessage>


C:\hdvm>
```

# 6 Troubleshooting

This chapter describes appropriate actions to take if there is a problem with Device Manager CLI.

- Troubleshooting (section 6-1)

## 6-1 Troubleshooting

If there is a problem with Device Manager CLI:

- Make sure that the problem is not being caused by the PC or LAN hardware or software, and try restarting the PC.
- Make sure that the problem is not occurring at the Device Manager server. Please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Server Installation and Configuration Guide* for troubleshooting information for the Device Manager server.
- For troubleshooting information specific to Device Manager CLI, see Table 6-1.
- For troubleshooting information common to Device Manager CLI and Web Client, please refer to the *HP StorageWorks Command View XP Advanced Edition Device Manager Web Client User Guide*.

IMPORTANT: Make sure to read the Device Manager Release Notes. Always make sure that only one Device Manager server at a time is actively managing a single subsystem.

Table 6-1 General Troubleshooting Information

| Problem | Description and Recommended Action |
|---|---|
| The CLI application does not run. The error message says:<br>`C:\hdvm>hdvmcli help GetStorageArray`<br>`The name specified is not recognized as an internal or external command, operable program or batch file` | CAUSE: The most likely problem is that there is no `java.exe` file in your path.<br>SOLUTION: Either update your path to include the directory holding the `java.exe` supplied by the Java™ JDK™ or JRE software, or edit the `hdvmcli.bat` file to specify the full path to your `java.exe` file. |
| `hdvmcli.bat` does not run. The error message says:<br>`C:\hdvm>hdvmcli help GetStorageArray`<br>`Exception in thread "main"`<br>`Java.lang.NoClassDefFoundError:`<br>`com/hitachi/hds/cli/Hicmd` | CAUSE: The `HiCommandCLI.jar` file may have been moved or renamed.<br>SOLUTION: Make sure that the `HiCommandCLI.jar` file has not been moved or renamed, and that you are executing from the directory where the `hdvmcli.bat` and `HiCommandCLI.jar` files reside. |

# Acronyms and Abbreviations

| | |
|---|---|
| AL | arbitrated loop |
| API | application program interface |
| ASL | array support library |
| CLI | command-line interface |
| DAMP, DMP | disk array management program |
| DKC | disk controller |
| FC | fibre channel |
| GB | gigabytes (1024 MB) |
| GUI | graphical user interface |
| HTML | hypertext markup language |
| HTTP | hypertext transmission protocol |
| HTTPS | hypertext transmission protocol secure |
| HBA | host bus adapter |
| ID | identification, identifier |
| IP | internet protocol |
| JRE | Java™ Runtime Environment |
| KB | kilobytes (1024 bytes) |
| LDEV | logical device |
| LU | logical unit |
| LUN | logical unit number |
| LUSE | LU Size Expansion (feature of XP1024/XP128 and XP512/XP48) |
| MB | megabytes (1024 KB) |
| MCU | main control unit (for Continuous Access XP) |
| OS | operating system |
| PDEV | physical device |
| P-VOL | primary volume (for Business Copy XP or Continuous Access XP) |
| RAID | redundant array of independent disks |

| | |
|---|---|
| RCU | remote control unit (for Continuous Access XP) |
| SCSI | small computer system interface |
| SNMP | simple network management protocol |
| SSID | storage subsystem ID |
| S-VOL | secondary volume (for Business Copy XP or Continuous Access XP) |
| SVP | service processor (component of XP1024/XP128 and XP512/XP48) |
| URL | uniform resource locator |
| VxVm | VERITAS™ Volume Manager |
| WWN | worldwide name |
| XML | extensible markup language |